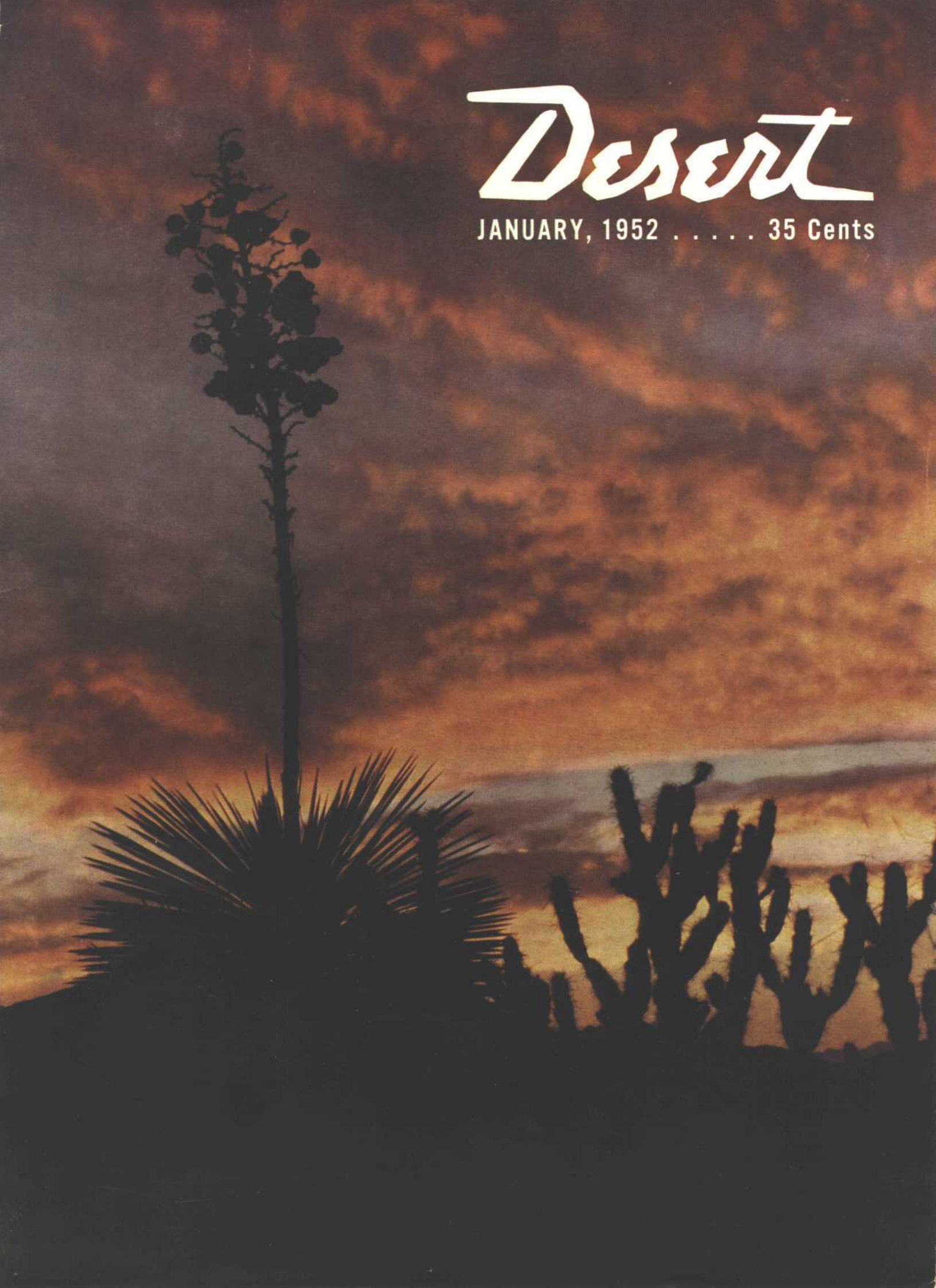


Desert

JANUARY, 1952 35 Cents



Letters

Tables for Picnics Enroute . . . Long Beach, California

Desert:

On a 7300-mile motor trip across the country and back last summer, we passed through many states. We were delighted to use the roadside tables provided by the highway commissions in nearly all of these states as well as in Canada.

"Table ahead" signs were posted a mile before the picnic area was reached. The tables were in shady places along the highway; if not in natural shade, they stood next to buildings or under constructed covering. Often there were barbecue facilities and wood for cooking. A garbage can always stood handy for trash, and, surprisingly perhaps, the garbage was "canned." The grounds were neat and free of rubbish.

Used? Many times we had to pass several tables before we found one vacant. We saw travelers having breakfast, lunch and supper, or just resting out in the open air.

California seems to be one of the states which as yet have not established such roadside way places. Wouldn't it be grand if our own state would provide such conveniences for the motor-ing public?

MR. AND MRS. E. N. JONES

Barn Owl Worth 12 Cats . . .

Red House, Nevada

Desert:

I am very glad you printed Mr. Bradt's article and pictures on birds of prey. "Do they deserve extinction?" he asks. Certainly everyone seems bent on exterminating them — from the farmer who loses a chicken, to the so-called sportsman who kills anything just for the killing.

For years I have defended these birds, pointing out their value in eliminating pesky field mice, rattlesnakes and the like. My words seem to avail little. As far as I can determine, the schools fail to teach much of anything about wildlife or conservation; hence the great ignorance about these things.

Perhaps some facts would interest your readers.

E. Laurence Palmer of Cornell University, wrote for the 1937 Rural School Leaflet in an article entitled "Are They Vermin": "A conservative estimate states that each hawk or owl in the state of New York kills an average of 1000 mice a year, a saving of at least 20 to 30 dollars to the farmer whose property it selects for its home."

According to data collected by Dr.

Palmer, one pair of meadow mice produces an average of 17 litters a year, each litter averaging six mice. Since the minimum breeding age for mice is 45 days, there is a possibility of more than 1,000,000 descendants for that one pair of mice at the end of one year!

An Audubon leaflet reports that one barn owl on the farm will kill more mice than a dozen cats.

MRS. EDITH L. ST. CYR

Live and Let Live . . .

Corvallis, Oregon

Desert:

"Birds of Prey—Do They Deserve Extinction?" NO, absolutely NO!

God put every creature on this earth for a purpose. Is it man's province to kill these beings—and destroy the balance? Already many animal species are extinct for wholesale slaughter of their kind.

I say live and let live.

ANNA C. BOSTWICK

Desert Field Trip Fans . . .

Capistrano Beach, California

Desert:

Occasionally—every third month or so—could you please clip away the field trip stories and maps before sending *Desert* to my roommate? Each month when your magazine arrives, she tears away the envelope and ten minutes later is ready for a trip.

The October number packed six of us off to Beatty, Nevada, where we found our first geodes. While there we met a young rockhound. We told him our next stop was the volcanic tear field written about in the September, 1950, *Desert*. He told us to stop at Slim Riggs' service station 36 miles north of Beatty, where the road to Scotty's Castle begins and ask Slim about the tears. We did, and were directed to an area covered with them. We only gathered those the size of walnuts or larger.

Desert for May, 1950, added many beautiful Wonderstone pebbles to our collection. That same *Desert* told us of the "Farm House" where we had a marvelous meal and a pleasant visit with Mrs. Hallie Jones. Next day Mrs. Jones took us to the canal bank, where we found petrified wood. She also gave us some specimens of petrified bone from Frenchman's Flat, now off limits to rockhounds because of atom bomb testing.

Our hunting time almost spent, we hurried home—only to find the November *Desert* in the mail box! Now my roommate is talking me into a drive to Leadfield cave. At my age I don't know how long I can keep this up—but please don't hold back any of our *Deserts*!

BLANCHE BRADBURY

Geronimo Controversy Spreads . . .

Hamburg, Germany

Desert:

I had the most welcome opportunity to receive a copy of your *Desert Magazine*, the contents of which impressed me greatly.

On reading your articles, memories of my own happy past came to life, for I too learned to love the great American Southwest during my wanderings in Arizona, New Mexico and Southern California. This was many, many years ago. Times have changed, and much of the American desert country may look different now than it did in my time. But to me it will always remain the awe-inspiring country of mysterious beauty in which there are no limitations of time or space.

I was interested in the comments of Eleanor Hodgson concerning the ancestry of the Apache Chief Geronimo. Both Miss Hodgson and Angelo Doka are wrong. Geronimo, or "Goyathlay" (The Yawning One) had not a drop of Greek blood in him. When one takes the time to read Geronimo's autobiography, written at Fort Sill, Oklahoma, he will know that Geronimo was a full blooded Nedni-Bedonkohe Apache (Chiricahua) who was born in 1829 in No-doyohn Canyon, Arizona.

His father was Taklishin (The Grey One), chief of the Nedni tribe, while his mother, Juana, was a full blooded Bedonkohe. Maco, his father-in-law, was chief of this tribe.

The statements made by Miss Hodgson and Mr. Doka caused some consternation among German ethnologists, and I had the rather unique experience to receive countless requests from all over Germany demanding that I come to the defense of Geronimo's real Indian ancestry! I did so, and my short articles were well received.

May I say again how much I enjoy the few copies of *Desert* which I receive. My heart is still in the American Southwest, although I now am living in a cold country where the beauties of Cholla, of the Purple Hedgehog, of the Arizona Barrel, the Prickly Pear, the California Poppy and the Purple Sage are unknown.

May I mention that I am active in affairs concerning ethnological studies pertaining to the history and folklore of the North American Indians? I am founder and leader of the "Mato-ska Society of Friends of the North American Indians." As an honorary chief of the Ogalalas, I am in close contact with some of my old Indian friends. Our Society was named in honor of Chief White Bear (Mato-ska) of the Ogalala Sioux.

DR. OSCAR C. PFAUS

DESERT CALENDAR

December 31-January 1—Annual Peg-leg Smith Lost Gold Trek and Liars' Contest, Borrego Valley, California.
 January 1—New Year's Grand Slalom, Flagstaff, Arizona.
 January 1—Ceremonial dance at Taos Pueblo; Comanche dancers in Plaza of Rancho de Taos, New Mexico.
 January 1-31 — Special exhibit of paintings by the late Alfredo Ramos Martinez of Mexico, Southwest Museum, Los Angeles, California.
 January 1-31—Annual winter exhibitions at Harwood Foundation, La Fonda de Taos and Blue Door Art Galleries, Taos, New Mexico.
 January 2, 3—Twelfth Annual Palm Springs Rodeo, Polo Grounds, Palm Springs, California.
 January 2-5—Arizona National Livestock Show, Phoenix, Arizona.
 January 6—Ceremonial dance following inauguration of new governor at Taos Pueblo, New Mexico.
 January 6—Don's Club Apache Trail Trek, from Phoenix, Arizona.
 January 6—Southern California chapter of Sierra Club hike to Mt. Harvard via Henninger Flats, California.
 January 6—King's Day and buffalo or deer dance at Taos Pueblo, Taos, New Mexico.
 January 10, 24—Desert Sun Ranchers Guest golf tournament, Wickenburg Country Club, Wickenburg, Arizona.
 January 12 — Southern California chapter of Sierra Club moonlight hike to San Dimas Canyon, California.
 January 12, 13—Flagstaff Chamber of Commerce Snow Carnival and Fiesta, Flagstaff, Arizona.
 January 12, 13—Southern California chapter of Sierra Club hike to Chino Canyon, California.
 January 12, 20—15th annual Border Golf Tournament (Open), International Golf Club, Calexico, California.
 January 13 — Desert Sun Ranchers Rodeo, Slash Bar K Ranch, Wickenburg, Arizona.
 January 13 — Don's Club Trek to Wickenburg Dude Ranches, from Phoenix, Arizona.
 January 13—Bandolero tour to Tinajas Altas from Yuma, Arizona.
 January 20 — Benefit Horse Show, Sheriff's Posse Corral, Tucson, Arizona.
 January 23-27 — Tucson Open Golf Tournament, El Rio Country Club, Tucson, Arizona.
 January 23-27—Phoenix Open Golf Tournament, Phoenix, Arizona.
 January 25 — St. Paul's Day Ceremonial and dances, Taos Pueblo, Taos, New Mexico.
 January 27 — Don's Club Trek to Pima Indian Reservation, from Phoenix, Arizona.
 January 27 — Desert Sun Ranchers Rodeo at Remuda Ranch, Wickenburg, Arizona.
 January 26, 27—Desert Peaks section of Southern California chapter, Sierra Club, climb in Rodman Mountains, California.
 January 27—Sierra Club, Southern California chapter, climb of Josephine Peak, California.
 January 29—State Eagles' Convention, Yuma, Arizona.



Volume 15

JANUARY, 1952

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 MARTIN MORAN, Circulation Manager
 BESS STACY, Business Manager
 E. H. VAN NOSTRAND, Advertising
 Los Angeles Office (Advertising Only): 2635 Adelbert Ave., Phone NORMANDY 3-1509

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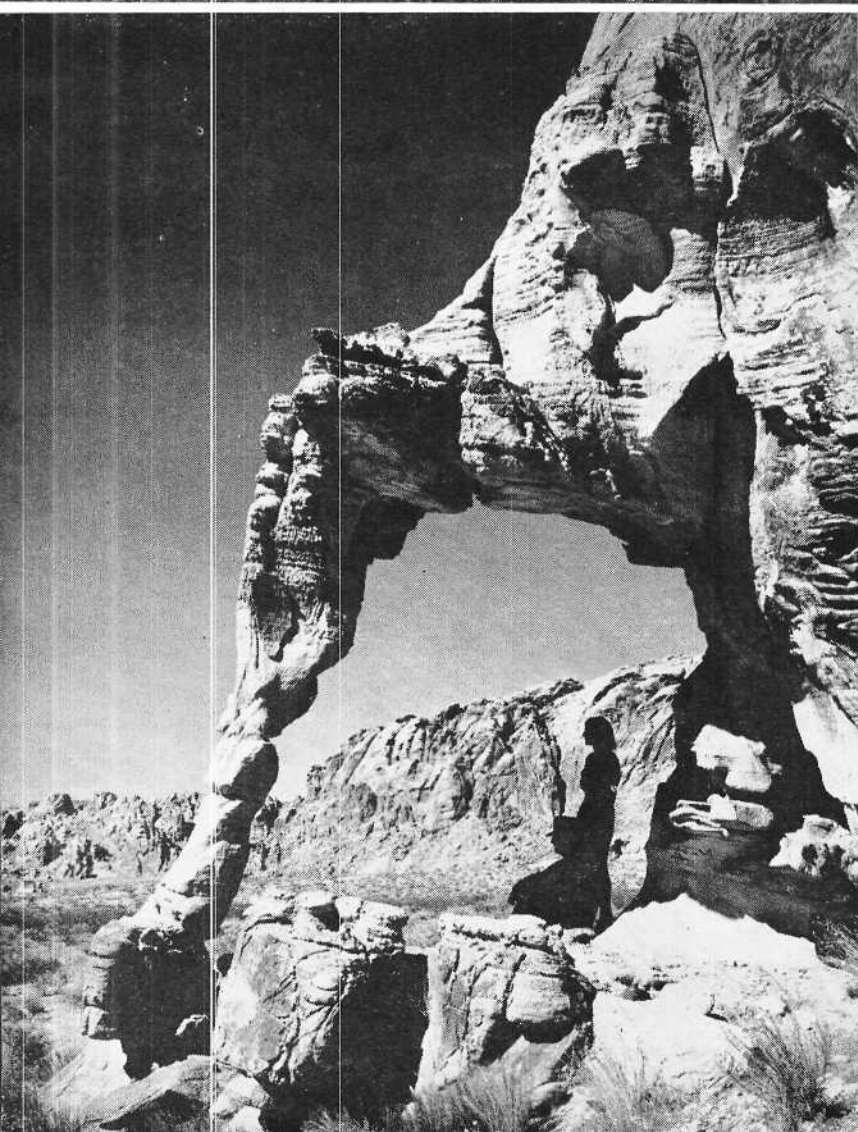
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Pictures of the Month

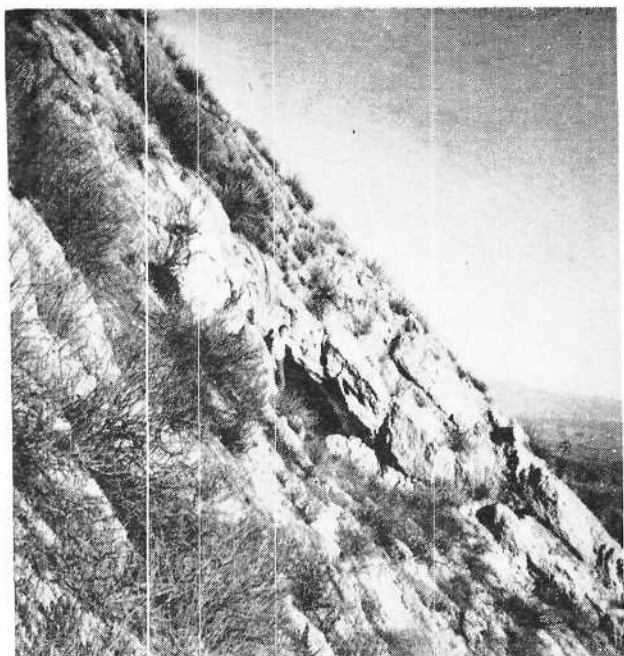
Indian Ollas . . .

Water vessels of the ancients, found in a desert cave in broken pieces—and painstakingly patched together. Photograph taken by Helen Schwartz of Pasadena, California.

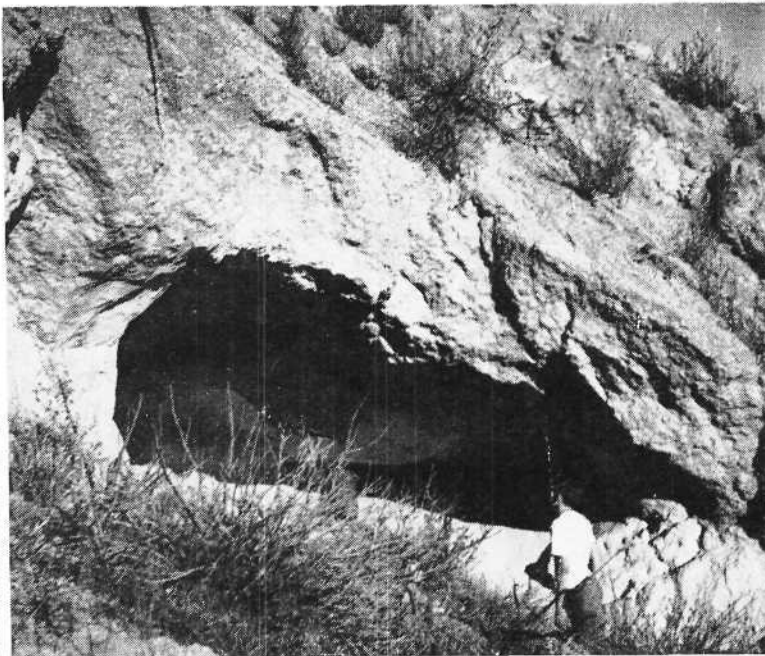


Elephant Rock . . .

One of the amazing formations found in Nevada's Valley of fire north of Las Vegas. This weird stone structure is the result of thousands of years of erosion. Photograph by Hubert Lowman, South Gate, California.



Access to the cave is from a steep slope in the San Martins Mountains. The rock formation here is conglomerate containing many marine fossils.



From the floor of this cave in the San Martin Mountains came some of the finest Indian ceremonial material ever found in the United States.

We Found the Lost Indian Cave of the San Martins

When the medicine men of the T'alliklik tribe of California Indians saw their people turning away from their native gods in favor of the new religious forms brought to them by the Spanish padres they were determined to preserve the symbols of their own primitive faith—and so they hid their feather robes, ceremonial wands and magic blades of obsidian in a remote cave in the mountains which border the California desert. Here they remained for nearly 100 years—until the discovery, reported in this story.

By RICHARD VAN VALKENBURGH

Photographs by George L. Pagan

Map by Norton Allen

7UCKED HIGH in a ledge slanting across a wind and water scoured face of a desert ridge within sight of Castaic Junction in northwest Los Angeles county, California, is a cave from which came some of the most famous Indian material ever to be discovered in the United States.

While archeologists knew that the only mounted "perforated stones" ever to be discovered in the United States came from the region, they had never been able to locate the cave from whence they came. Their only clue was a statement by Dr. Stephen Bowers, the collector who handled the material, "... from a cave in the San Martin mountains in Los Angeles County."

My first lead to the location of the cave came some years ago while I was

engaged in archeological work in Piru Canyon drainage. It happened while I was camped on the old T'alliklik Indian rancheria of T'akwishbit, "Place of Ball Lightning."

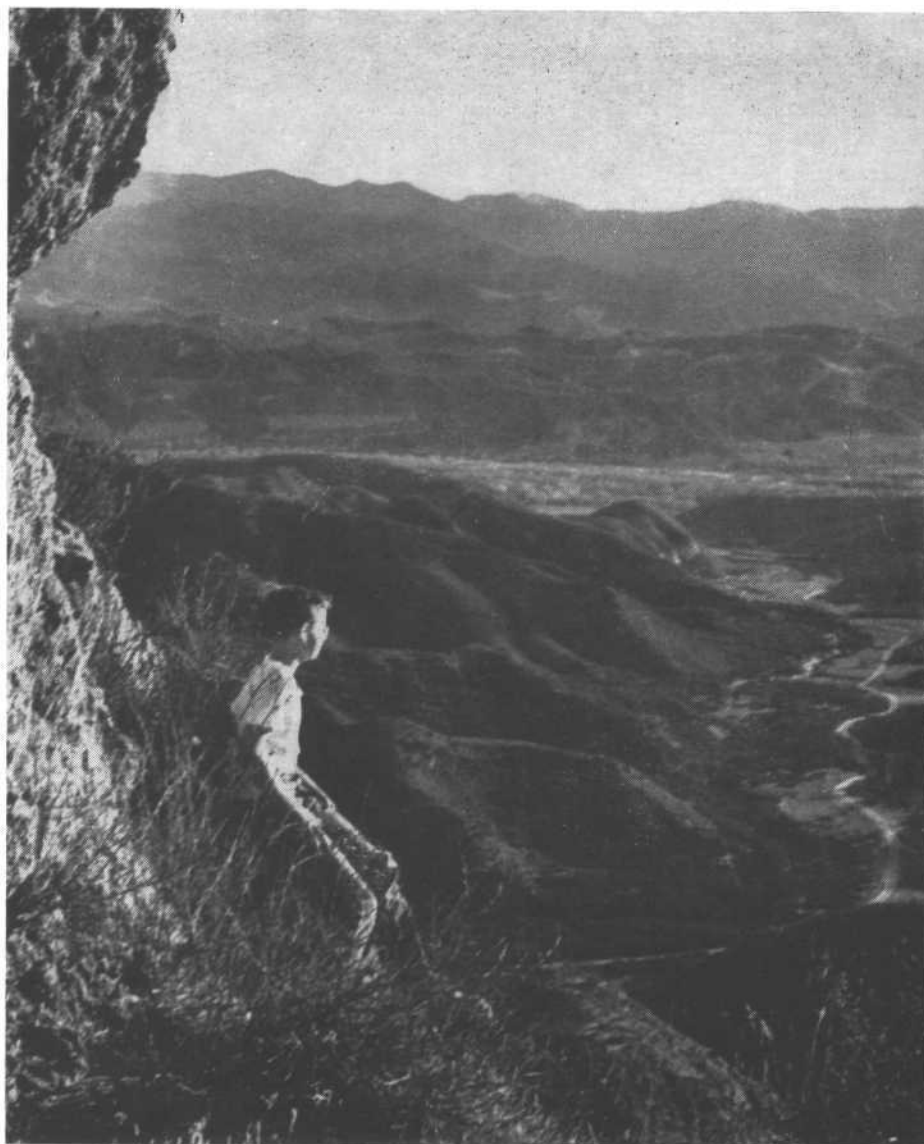
One evening while looking over the arrowpoints, bone and wood artifacts, and basketry fragments which had been dug from a cave in nearby Hazel Canyon, William W. Lechler, who had lived in the canyon since the days of the Indians, casually remarked:

"This is pretty good stuff. But the greatest Indian find ever to be made around here was many years ago by the Pyle boys. They got baskets as big as washtubs; feathered robes, and clubs made of wood and stone in the San Martins. Everett Pyle is still alive and lives in Fillmore!"

With this information I immediately contacted Dr. John P. Harrington, ethnologist of the Smithsonian Institution. Together we went to Fillmore, and from Everett Pyle, then in his 80's, we heard the story of the Cave of the San Martins.

During the 1880's Everett and his brother McCoy lived with their mother Mandy Pyle in Mud Springs Canyon three miles northwest of present Castaic Junction. When not helping with the bees and livestock the boys spent their time hunting through the nearby canyons and ridges.

May 2, 1884, McCoy went westward over the old Indian trail toward the San Martins to look for deer. Picking his way upward along the sandstone scarps he went over the apex



of the ridge and started down the south slope. Fifty feet below the summit he spied a black opening in a nearby ledge.

Working across the crumbly face McCoy reached the lip of the cave. Hoisting himself inside he looked into the shadows. Before him, partially covered with dust, lay many Indian baskets ranging from small asphalt covered water jugs to giants three feet in diameter!

McCoy looked into the baskets. He saw feather robes and headresses cunningly woven with flicker and condor feathers. There were also four finely shaped stone ax heads, and assorted ceremonial obsidian knife blades and some crystals.

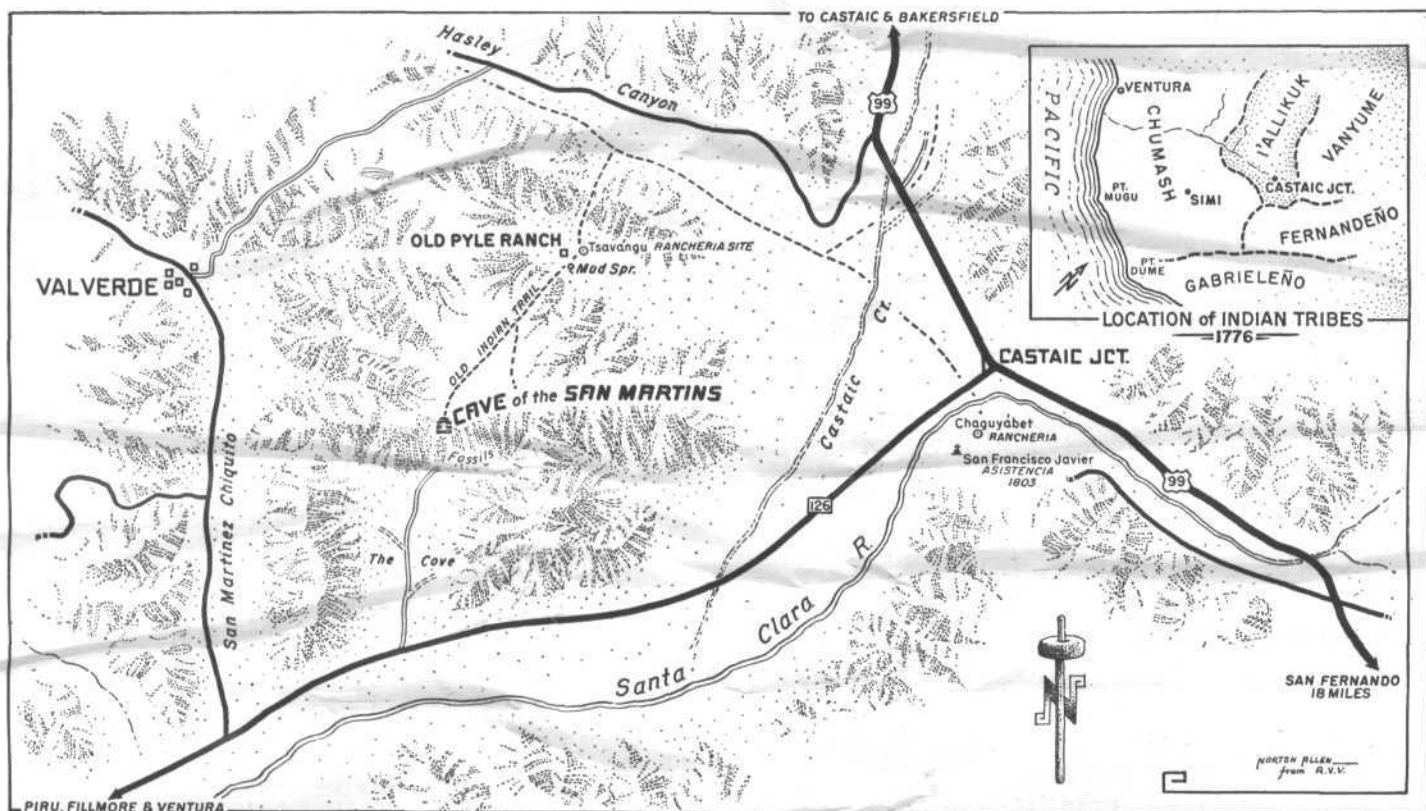
But most important of all were four ceremonial wands or scepters. Shaped like doughnuts these perforated stones were decorated with red ochre designs, and were mounted on their original wooden handles with asphaltum, the waterproofing and glue of southern California's primitive Indians.

McCoy hurried back to the ranch and broke the news to Everett. Together they rounded up a couple burros and returned to the San Martins. After several trips to the cave the boys finally

Across the Rio Santa Clara from the entrance to the cave of the San Martins once stood the San Francisco Javier asistencia of the Mission San Fernando Rey. In the picture is George Lechler who gave Harrington and Van Valkenburgh a lead which led to the re-discovery of the cave.

After his discovery of the Indian Ceremonial cache in 1884 McCoy Pyle left his record on the wall of the cavern. Initials on the right are those of Frank M. Neal, half brother of Pyle, who is believed to have been the last man to visit the cave until its recent re-discovery by Richard Van Valkenburgh and companions.





had all of the treasure safely stored in the milk house at the ranch.

It happened that Stephen Bowers was in the region looking for Indian relics. Hearing of the Pyle discovery he hurried over to Mud Springs Canyon. He purchased the collection for \$1500. Everett reminisced, "... that seemed like all of the money in the world — it was like finding a gold mine."

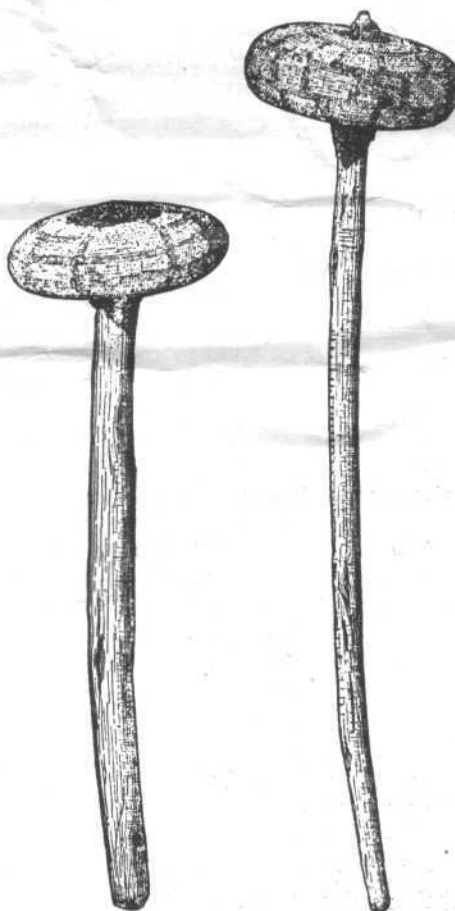
Bowers sold part of the collection, including the ceremonial wands, to Professor F. W. Putnum of the Peabody Museum, Harvard University. What happened to the rest of the material is not known. Bowers sold Indian artifacts to museums all over the World.

Upon examining the material Henry W. Henshaw of the Smithsonian Institution wrote, "While perforated stones have been rather commonly found in southern California, these are the only ones ever found in the United States mounted on their original handles."

"After careful consideration of these implements, I am convinced that their peculiarities accord best with the idea that they were the property of medicine men, or conjurers, and were probably used in dances, superstitious ceremonies, such as rain making, curing the sick, etc."

Bidding Everett goodbye John and I headed for the San Martins. From Castaic Junction we traveled southwest down the Santa Clara River over Highway 126. Then we turned north

These two specimens of the rare "perforated stones" in their mountains on exhibit at the Los Angeles County Museum. Smithsonian Institution drawing.



and started up a small canyon which Everett called the "Cove."

One mile's twisting drive on the dirt road brought us to the base of a ragged ridge. Looking up, we estimated that the summit was 1000 feet above. After checking the landmarks given us by Everett we were sure that we had located the elusive San Martins.

Scanning the area below the eastern pitch of the ridge we soon located the wild cherry tree that had been given us as a marker. Slipping on our haversacks and canteens we broke through the heavy growth of sage and started to climb the ridge.

We found the base of the San Martins to be composed of a conglomerate predominately of fossilized oyster and pecten shell. We soon learned that this tricky formation which may be wonderful country for rockhounds, made tough climbing.

At the end of a 30-minute climb we reached a level space 75 feet below the summit. We took our bearings. The lone wild cherry was a stone's throw across a ravine. Then we got the right angle. Under a ledge to the left of the tree the Cave of the San Martins opened in the chrome colored sandstone like a distorted mouth.

Detouring the dangerous traverse direct to the cave we climbed to the summit. From there the whole country spread out before us. To the west—the peaks of San Cayetano poked up through the clouds drifting in from the sea. Beyond—lay the Padres National

Forest, the habitat of California's giant condors.

Eastward—in the land of the long gone Vanuyme Indians—the headings of the Rio Santa Clara fingered upward through Bouquet, Mint, and Soledad Canyons. Above, the heat waves shimmered upward from the desert to fade into the blue-black dome of the Sierra Pelona.

After a few moments' rest we started our descent to the cave. Finding foot and handholds on occasional clumps of sage we braked our downward momentum until until we reached the mouth of the cavern.

When we jumped over the lip we saw that it was not a large cave. The mouth was 21 feet across; the dome was 10 feet from the floor; and it ran back into the conglomerate 16 feet. A glance at the fire-blackened ceiling told us that the cave had known human habitation.

According to Richard Van Valkenburgh, who is recognized as an authority on archeological subjects, there are many theories as to the purpose for which the prehistoric Indians made the "perforated stones" described in this story. Richard says: "It is my contention that they were used for various purposes; ceremonial when made of steatite and serpentine, and decorated; digging stick weights; weights for nets; the smaller ones for weights on drills, etc. I rather doubt if they were used as weapons, for the war club of this area generally was a hunk of hard wood, usually a knot."

Suddenly John called out, "Van, Everett sure gave us the right dope. There is no question that this is the cave where McCoy made his discovery. There are some inscriptions here carved in the sandstone and among them is "MAC—1884"!

At the same time my toe caught on something just below the powdery surface of the floor. Looking down I saw that it was a large fragment of asphalt coated basketry. Then I remembered that Everett had said, "We left a big basket in the cave because it was crumpled."

This discovery told us that we might learn more if we probed into the floor

fill. Starting at the front we worked back with trowels and brushes. When we finished, we knew a lot more about the Indians who had left their treasures there over 100 years before.

Small blue and rose colored glass beads found just below the surface told us that the cache found by McCoy had been placed in the cave around 1800 A.D. The lack of hearths told us that the cave had not been used for permanent living, but as a hideaway.

Three pottery sherds of black decoration on gray ware turned up on the lower levels. Sharply contrasting with the local Mojave desert red and gray plainwares, these sherds were later identified by the School of American Research in Santa Fe, New Mexico.

Winners Selected in "Life on the Desert" Contest

After careful consideration, *Desert Magazine* staff judges awarded first place in the "Life on the Desert" Contest to VIVIANNE L. GEORGE of Chatsworth, California. Miss George wins the \$25 cash prize for her warmly human story, "Desert Christmas," which appears in this issue.

A number of other manuscripts so pleased the panel of judges that the decision was made to purchase them for use in future *Deserts*. Receiving \$15 each for their entries were:

CHARLES BATTYE of San Bernardino, California, for "Grief, Gratitude and Gold," a true Indian tale.

PHYLLIS W. HEALD of Portal, Arizona, for "Modern Hopi," the biography of an Indian woman caught between "modern" and "ancient" ways of life.

REEVE SPENCER KELLEY of Albuquerque, New Mexico, for his amusing story of "Betty" the peach fork and her owner, Ed Salby the water diviner.

WALTER H. KOCH of Salt Lake City, Utah, whose exciting narrative followed a boat trip down the San Juan and Colorado Rivers.

BILL MOORE of Twentynine Palms, California, for "Search for a Shack," the chronicle of his homesteading experiences.

EDNA C. PRICE of Idyllwild, California, for "Christmas Comes to Binney," the story of a forlorn "bindle stiff's" return to self-respect.

Congratulations to the winners! *Desert Magazine* readers will be seeing their stories in later issues.

They were Verde black on gray of the 13th century!

Coupled with the Pyle discovery of diorite stone axes, one of which was still in the possession of Everett, it seems that the *Palliklik* had trade contacts that reached eastward beyond the Colorado River. Probably they traded sea shells from the nearby coast for the worked stone and pottery of Arizona?

When John and I finished our work we rested on the lip of the cave and watched the casual shifting of the summer's sunlight into the misty blue of twilight. As I looked into the deepening green shadow that was the Rio Santa Clara my thoughts shifted back over a hundred years to the pageant of what had happened passed before me.

CAVE FIRE ROUTED GROUP OF PREHISTORIC INDIANS

At about the time that ancient Rome burned, another much smaller fire routed a group of Mongollons, a prehistoric tribe of Indians, from their cave home in Western New Mexico. The Mongollons had inhabited the area for more than 1000 years prior to the fire.

Rome burned in 60 A.D. In the summer of 1951, archeologists from the Chicago Natural History Museum sifted from the ashes and dust of the cave floor a story of 3000 years of culture in the southwest. Dr. Paul S. Martin, chief curator of anthropology at the museum and leader of the expedition, has issued a report on the group's findings. The cave, now called Cordova Cave, is large and defensible, though far from water supply.—*The Mineralogist*.

CONRAD WIRTH APPOINTED NATIONAL PARKS DIRECTOR

Conrad L. Wirth, who has served with the National Park Service since 1931, has succeeded Arthur E. Demaray as director of the service. Demaray's retirement ended a Federal government career extending over 48½ years. The appointment was announced by Secretary of the Interior Oscar L. Chapman, who also announced Thomas J. Allen is a new assistant director. The position of associate director has been abolished. Hillory A. Tolson is designated as senior assistant director and will serve as director when Wirth is absent.



This is believed to be the ruins of one of the old mill buildings, designed to make paper pulp from the Joshua trees.

Forgotten Mill of the Joshuas

By EVALYN SLACK GIST

A SINGLE paragraph in an old botany book gave me the first clue to a scheme which many years ago threatened to rob the western desert of its Joshua trees. In *Wild-flowers of California* by Mary Elizabeth Parsons, published in 1913, I read:

"Joshua wood furnishes excellent material for paper pulp and some years ago an English company established a mill near Ravenna in Soledad Canyon Pass, for its manufacture. It is said several editions of the London Journal were printed upon it but owing to cost of manufacture the enterprise was abandoned."

That was all I had to go on.

To one who has watched and loved the desert for over 30 years, the suggestion of denuding the desert of its Joshua trees to make paper was a sacrilege. I wanted to know more.

A search of the old history books in the libraries of Los Angeles and Sacramento brought to light some rather vague information.

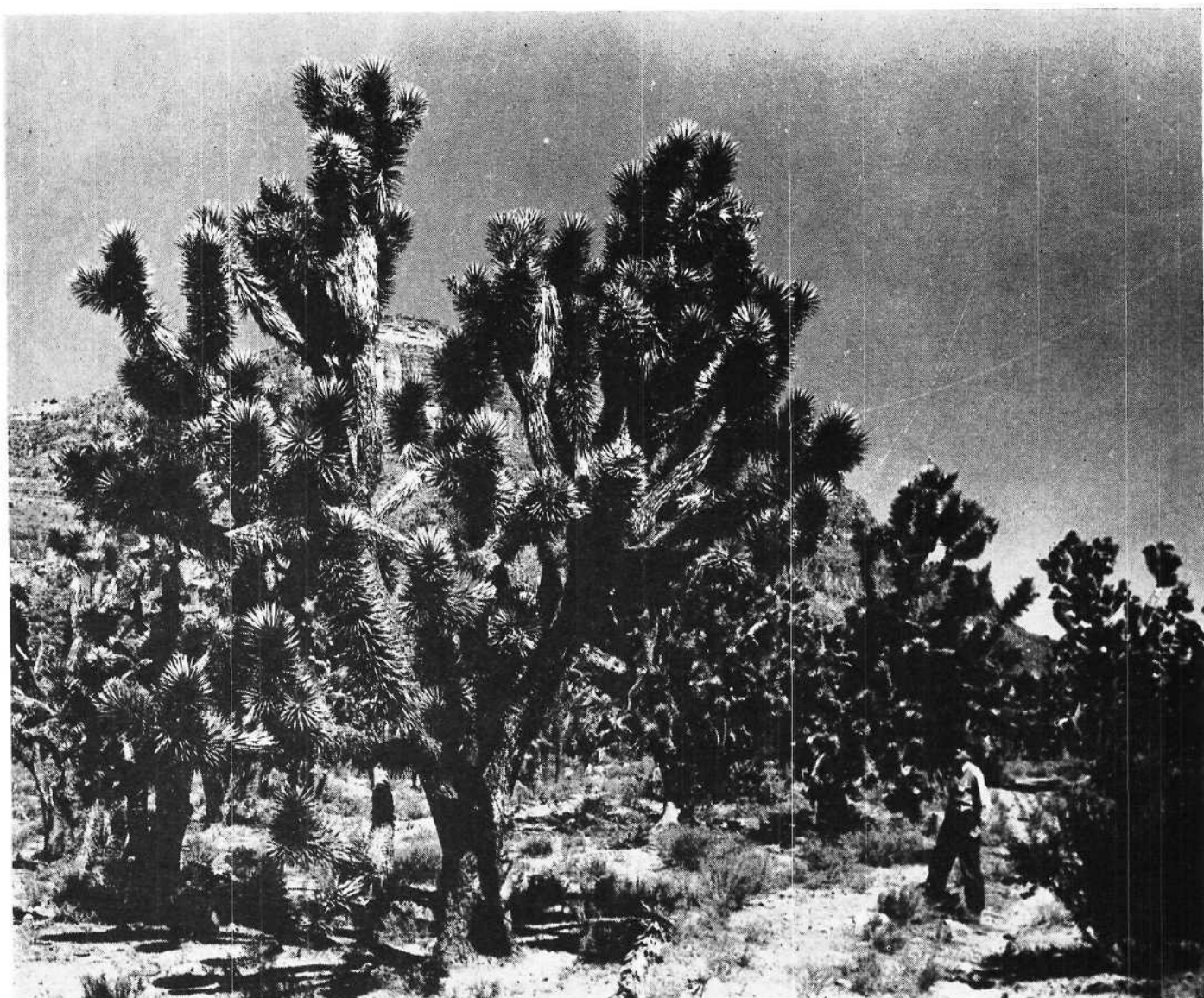
Persistent inquiries unearthed other facts. A letter to Lord Camrose and Arthur E. Watson, proprietor and editor of the London Daily Telegram, turned up nothing of importance since their records had been destroyed. Another to the Congressional Library in Washington, D. C., was slightly more successful. An inquiry to the Agri-

More than once in the last century, industrialists have cast covetous eyes toward the great Joshua forest which extends over much of California's Mojave desert. Experiments have been conducted in many laboratories in an effort to find a commercial use for the wood. Here is the story of one experiment which failed, and there are many who will share the author's feeling that failure in this instance was a fortunate circumstance.

cultural College in Corvallis, Oregon, brought me a copy of an article published in 1891, containing a brief reference to the Joshua tree in relation to paper.

Piecing together the information from these and other sources I was able to reconstruct the story as follows:

About 1870, experiments led a few optimistic people in California to put value on the Joshua trees, not for their strange appearance and wax-like blos-



Joshua forest on California's Mojave desert.

soms, but as a possible source of paper.

Finally the Atlantic and Pacific Fiber Company of London, England, established in 1884, with Colonel Gay and a Mr. Payne as managers and J. A. Graves of Los Angeles as attorney, came into the picture. They acquired 5200 acres of Joshua covered land in the Antelope Valley of California for the purpose of converting the trees into paper. They also contracted to furnish the London Daily Telegraph with Joshua tree paper.

Just why a London firm should cast covetous eyes on the California Joshua tree is anyone's guess.

The land was located between Alpine and Ravenna in Soledad Canyon Pass northeast of Los Angeles, California. The London company employed a crew of Chinese to cut the Joshuas into two foot lengths and haul them to Ravenna where they had converted an old stamp mill into a plant for the reduction of the wood to pulp.

Great quantities were shredded, compressed and baled for shipment to London where the pulp was to be turned into paper.

At the District Agricultural Fair which took place in Southern California the latter part of October a year later, there was an exhibit of shredded Joshua wood and several good sized logs, brought in from the Mojave desert. Manufacture of products from Joshua trees was heralded as a "new industry."

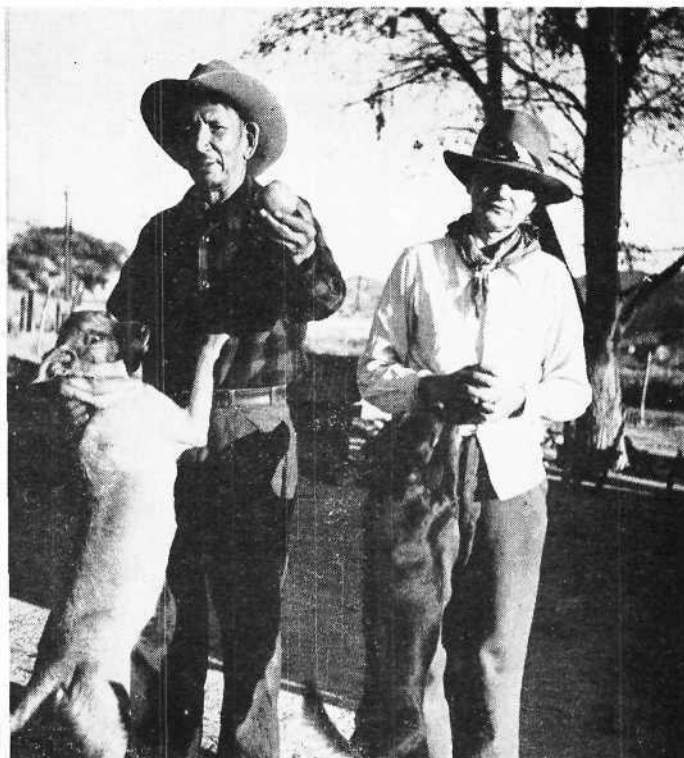
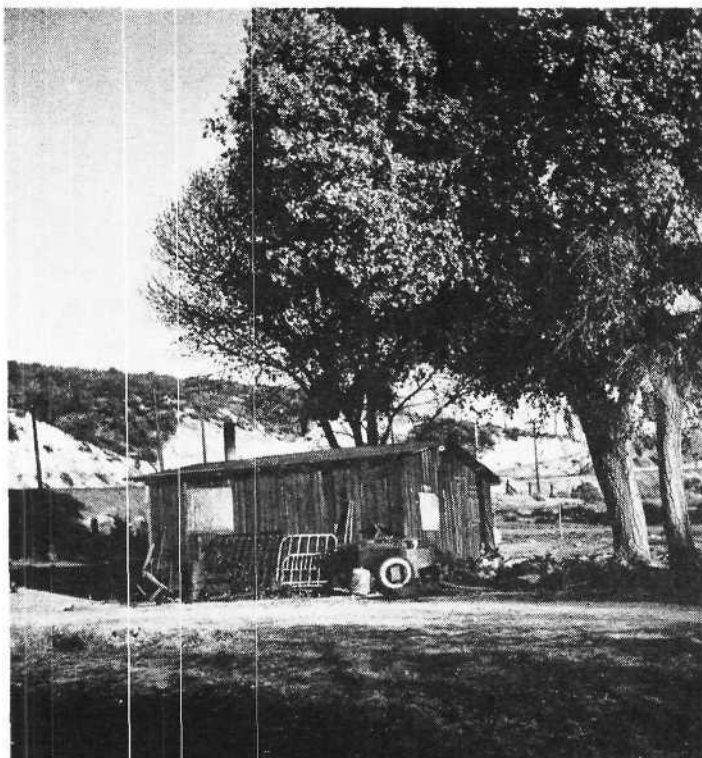
It was stated that the manufacture of excellent quality paper from Joshua trees growing on the Mojave desert was being tested at the Lick Paper Mill at San Jose, by parties who planned to obtain control of all the paper mills on the coast and set them to manufacturing Joshua paper exclusively. This article went on to say the "cactus" paper was very strong and the supply of material unlimited.

In 1891, an article mentioned a mill

on the Colorado River, built about 1871, which worked up Yucca stems and leaves into paper pulp. After shipping large quantities of both brown and white paper, the mill closed and reopened a couple of times before the venture finally was abandoned.

Another publication, in November, 1894, gave three more uses of the Joshua tree, facetiously referring to them as "monkey-puzzle trees" since it would puzzle a monkey to climb one. It mentioned a factory making tree protectors and told of a Los Angeles concern manufacturing Joshua tree surgeon splints. It went on to describe how a factory peeled the trunks, much as one does a potato, to make a sort of veneer which was stained the color of various woods. The publication ended by saying the Joshua veneer proved to be entirely too porous, absorbing great quantities of color so the project was abandoned.

Another version of the paper scheme



The cabin in which Indian John Peake and his wife live with their big family and dogs and cats, near the mouth of Soledad Canyon.

revealed that the first shipment of the pulp to England spoiled on the way and that paper made of a subsequent shipment proved to be of inferior quality.

As late as 1933, information on Joshua tree paper was being printed. Charles Francis Saunders in *Western Wildflowers* wrote: "... the trees seemed to be of no value until someone thought of them as possible paper stock. At one time, now some 50 years ago, a small pulp mill was built at Ravenna in Soledad Canyon Pass about 60 miles north of Los Angeles. Paper was manufactured and shipped to various parts of this country as well as to England where a few editions of the London Daily Telegraph are said to have been printed upon it."

It is quite possible the Atlantic and Pacific Fiber Company was heartily sick of its project when a cloudburst solved the dilemma in February, 1886, by destroying the mill in Soledad Canyon Pass and routing the Chinese workmen.

Today, if you want to visit the site you ask permission of John Peake, an Indian, who with his wife and several cats and dogs, occupies a little cabin at the gate leading into the canyon.

Peake told us he had heard of the mill. He pointed in the general direction of the site—but assured us there wasn't a thing to see.

We parked the car under a group of cottonwoods a quarter of a mile

beyond the gate and started along the boulder-strewn bed of a dry arroyo, my husband leading.

For two hours we searched both sides of the riverbed and were about ready to agree with Peake that there wasn't anything to see when one of our party let out a whoop.

"Forward and right," he shouted. "You'll have to crawl under this fence and climb the bank." Hot and tired we finally arrived at the edge of Mill Creek, a tiny crystal stream. And there were the timbers and remnants of a building put together with square nails. Not far from this venerable relic was a circular stone tower-like structure, fast falling into decay. What part it played in the Joshua paper project, I do not know. Scattered beneath dense brush were all sorts of broken timbers and quantities of rusty iron.

After photographing the ruins and attempting to visualize the old Chinese camp, we headed for the car. It was nearly sundown when we closed the gate and waved to John Peake and his wife with their big family of pets surging about their feet. Looking back, the mill site was lost in wooded shadows.

Far down the canyon we edged into the long line of cars creeping toward Los Angeles. I was glad the Joshua paper project had failed. It was unthinkable to imagine the western deserts bereft of their most picturesque botanical denizens.

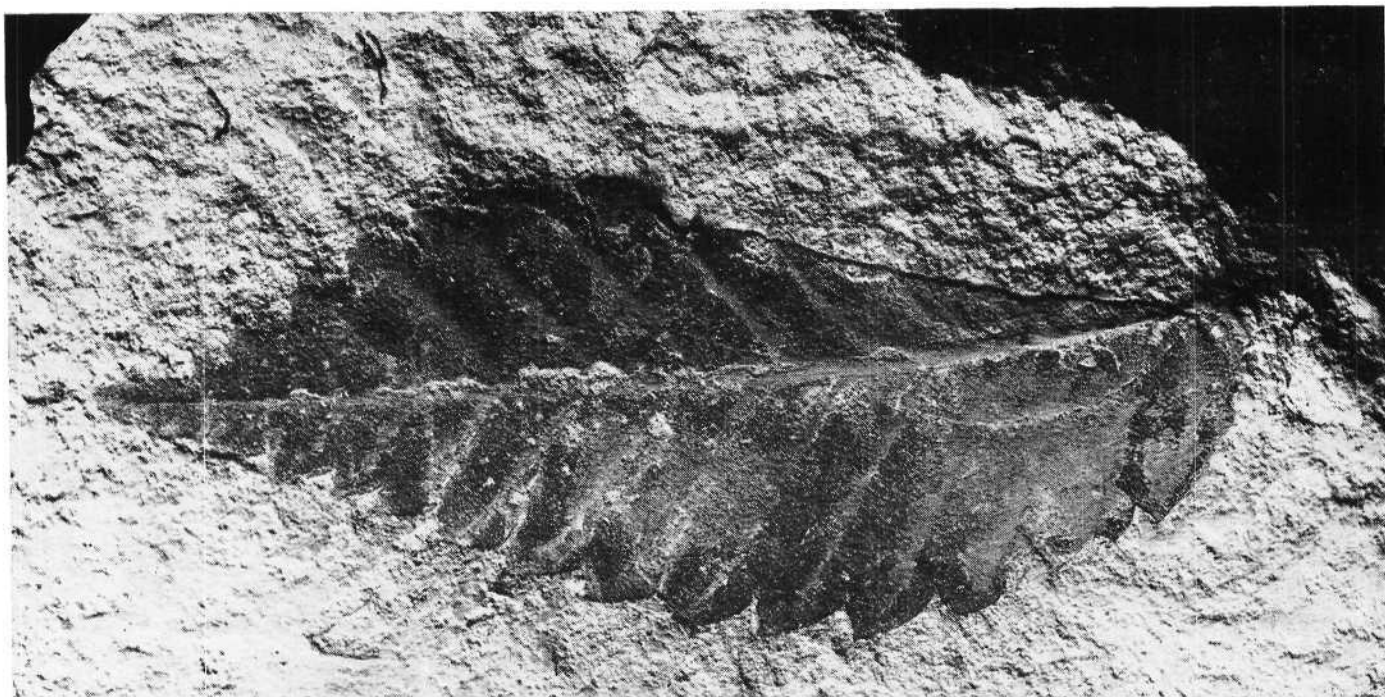
NAVAJO TRIBAL CHIEF ASKS FOR \$30,000,000

Dissatisfied with the progress made so far under the 10-year Navajo-Hopi rehabilitation program, Secretary of the Interior Oscar L. Chapman has expressed the opinion that larger appropriations for the program will be made by Congress next year.

Chapman headed a Washington delegation which recently checked rehabilitation progress. Other members of the "watchdog" committee were Interior Undersecretary Richard Searles, Arizona Senator Ernest McFarland and Indian Commissioner Dillon Meyer.

Sam Akeah, chairman of the Navajo council, pleaded for \$30,000,000 for the next three years to implement the rehabilitation program. It was also asked that there be a continuous flow of funds for the work rather than annual piecemeal appropriations.

Akeah confronted Chapman with several questions: How long is the "long-range" program—10 years, 20 years or indefinite? What part of the long-range program money is being applied toward the rehabilitation of the Indian Service in Washington and what is the residue that actually finds its way toward the goal of the act, rehabilitation of the Navajo? Is true progress being made in education? The Indian said his people want a foundation for the education of their children on the reservation, not in large boarding schools in remote cities.



Perfectly preserved by Nature for centuries, this fossil elm leaf was found intact in the diatomaceous earth of a Nevada hillside.

Fossil Leaves From an Ancient Nevada Forest

It was a great thrill to split open a piece of clayey earth and find the perfectly preserved imprint of a leaf which Nature buried there thousands of years ago. Like no fossils the Weights had ever seen, the faded brown leaves lay pressed between the thin strata of the Nevada hillside. Harold Weight describes the unique discovery, identifying the botanical varieties and suggesting an answer to the geologic puzzle of their origin.

By HAROLD O. WEIGHT
Photographs by the Author
Map by Norton Allen

BEULAH BUCKNER, who now lives in Reno, first told Lucile and me about Nevada's beautiful fossil leaves, and later guided us to the field in Buffalo canyon, along the road to Ione. The leaves were mentioned only incidentally the first time we heard from Beulah. She wrote to us about her collecting hobby and about a recent agate find she had made.

At that time Mrs. Buckner lived with a son at Peterson Highway station on Highway 50 between Fallon and Austin. "I was in the office of Bert Acree at Austin last summer," she wrote, "and spoke of finding a quantity of agate a few days before. He told me of your recent agate hunt in that locality, and asked me to write you." Bert, a helpful friend of ours,

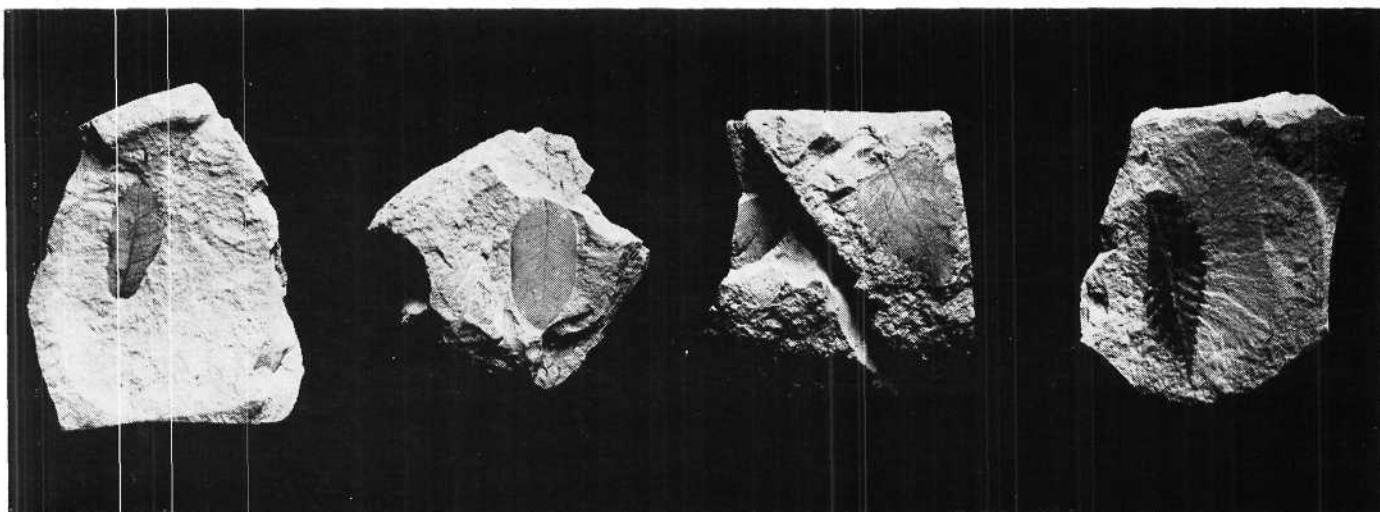
has been Lander County recorder from away back.

"I certainly intended to do so," Mrs. Buckner continued, "but many people warned me against it as we understood the information was for an article for *Desert Magazine*, which has many readers. Local people who let their friends from other states in on the secret of gem stones found to their dismay that they were hauled off by truckloads for commercial purposes. I wouldn't want that to happen as local gem clubs like to go back and find a few left.

"However, it sticks in my mind that I owe an obligation to Bert and I believe to you also. I love to share the things — and the knowledge — I find with others. I think that is the purpose of much of the information passed

on by publications. If you ever come this way again, stop in and I shall direct you as best I can."

Lucile and I have discussed the advantages of mapped field trips as against those of "secret" fields many times—especially after seeing what has happened, sometimes, to a favorite collecting area which we have written up. Each time, we have favored the publicizing of the right type of fields, and for the same basic reasons. First, there can be no such thing as a secret field—not for long. In rock collecting over large areas of the desert, we have discovered that fields never once mentioned in print are stripped as completely—and sometimes twice as rapidly—as any mapped. Second, the real rockhound—the individual who can't spend a week or a month ferreting out someone else's location but who can follow a map and get a day or a week-end of happy, healthy collecting—is the one who would suffer from a "hush-hush" policy. It wouldn't bother the rockhog, the wholesale commercial collector or the big dealer who hires prospectors or makes direct deals with local people in a particular area. That is—it wouldn't bother these latter at first. But when enough amateurs lost the



Fossil leaves were exposed after carefully separating the diatomaceous matrices. Recognizable are (left to right) leaves of oak, sumach, birch and elm. Drawings of the complete forms appear below.

interest in their hobby that field trips keep alive, there would be a drastic drop in the sale of cutting material.

Naturally any rockhound has the right to keep secret any find he has made, or to share it only with chosen friends. Also, many fields are too small, or the material too rare to be suitable for collection by large groups. But in general we believe that the lone collector or the little group—the real amateurs, the individuals who may not belong to any society but who help make rockhounding the splendid hobby it is—should have some sort of a break to give them a chance in competition with the mass collector.

So I wrote Mrs. Buckner, thanking her for the pleasant surprise her letter had given us and setting a tentative date for a rockhunt with her for the

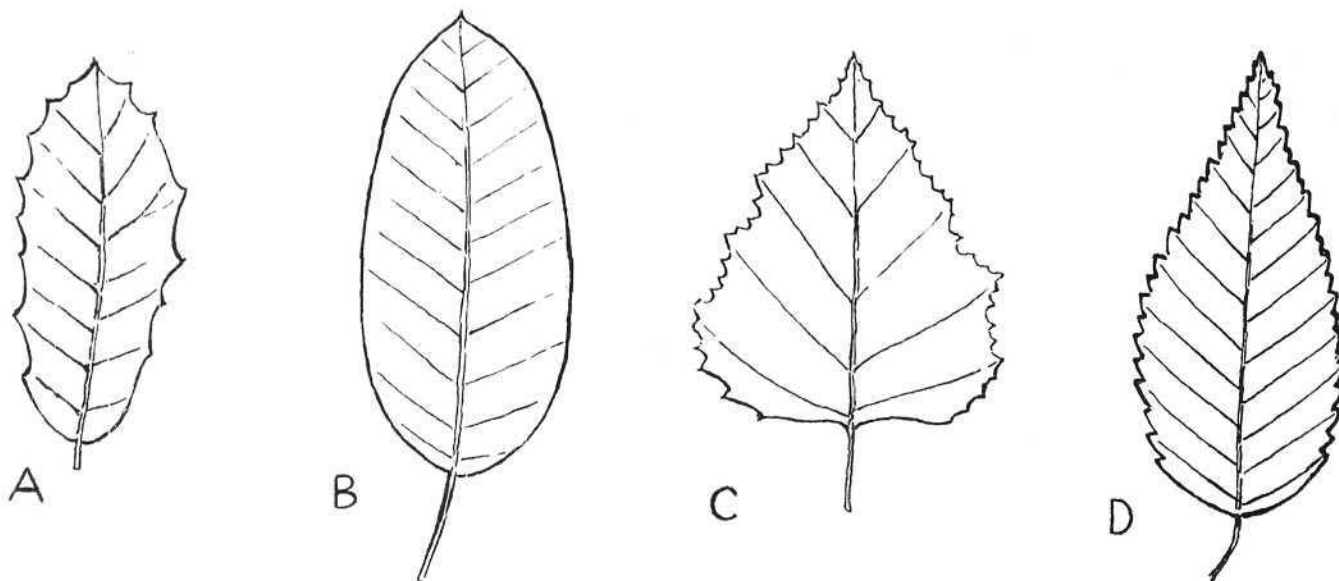
next summer. I also asked for more information about those beautiful fossil leaves she had mentioned. Nothing is more fascinating to me than the variations of the game of "Animal, Vegetable or Mineral?" which Nature and Time have played in the world of fossilization and petrification. Bone, wood, root and shell turned to stone or preserved through the ages will never cease to be wonders—and the idea that delicate leaf forms could be preserved in a fashion that would make them collecting items was intriguing.

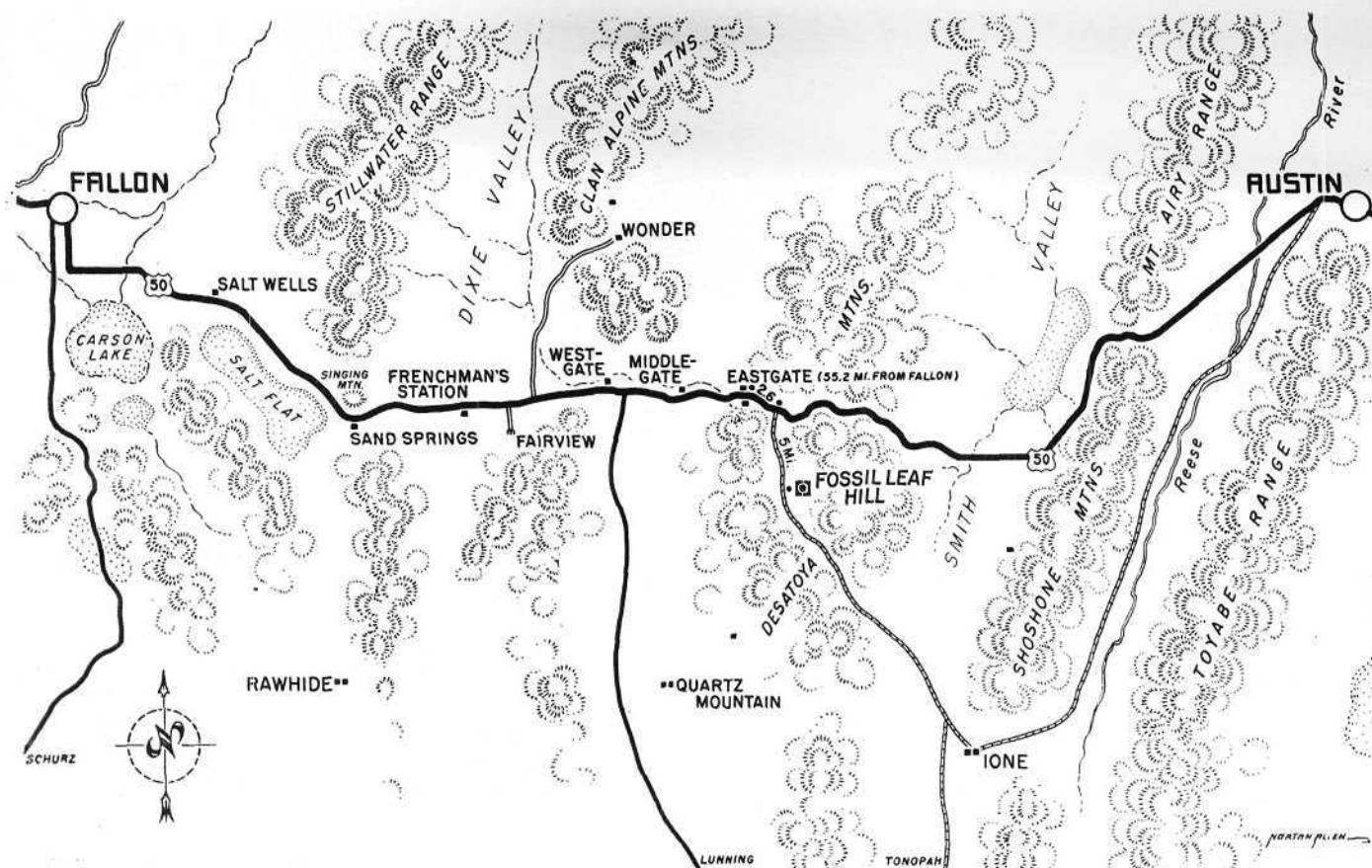
Late in the summer, when we made the trip into Nevada, Beulah was in the process of moving from Peterson's Station to Fallon. On the chance that she would not be able to make connections with us she had delegated Glen and Mary Price, of Fallon, to be

our guides. We met them that night at Jones' Farm House and discussed plans for the trip. Beulah, we learned, was expected in Fallon early in the morning.

She had not arrived by the time we were ready to start, so Mrs. Price went ahead with their pickup, taking Eva Wilson, while Glen Price rode with us to tell us about the country through which we would pass. Our route led south then east on Highway 50, past the turnoff to the Wonderstone pebble field (*Desert*, May, 1950) and on to Sand Springs where, on the left, 26.7 miles from Fallon, was the marker for a Pony Express station which once stood there. This stretch of Highway 50, between Fallon and Austin is a historic one; the route of Pony Express

Complete leaf forms of the photographed specimens, as drawn and identified by Jerry Laudermilk. A—Quercus, Oak. Evergreen or scrub oak. Leaf measures 1 15/16 inches; B—Rhus, Sumach. Probably the laurel leaved sumach. 2 5/16 inches; C—Betula, Birch. This specimen from the white birch. 1 7/8 inches; D—Ulmus, Elm. This from the Chinese elm. 1 5/16 inches.





and Overland Stage, military expeditions and mining camp freight lines. When Wonder and Fairview were booming, early in this century, Sand Springs, according to Glen, was a wagon yard and stopping place for the freighters.

There's another attraction to be seen north of the road at the Sand Springs station—beautiful Singing Mountain. This is a great white sand dune, with the dimensions of a small mountain, about a mile from the highway. Nevada winds keep the dune in constant motion and the sound of the moving sand has given it its name. There is said to be an Indian legend about it. The Shoshones and the Paiutes once met in battle there, and the Paiutes were defeated. The moaning of the sand we hear today is the mourning of the Paiutes for their lost glory.

When we stopped at Sand Springs, Glen Price found a "Norwegian grinding stone." Possibly you have seen these rounded, usually greyish stones around old mill sites. At one time they were considered the only satisfactory stones for use in ball mills for grinding the ore. They actually did come from the Scandinavian countries, being collected from the beaches there and shipped as ballast in vessels coming to America. Some, according to Glen, have agate sticking out of them. He has found a number of them along the road to Wonder. Teamsters would carry the worn ones along to throw at

the mules when emphasis for some command was needed.

The highway passes on through Frenchman's station, the site of another stopping place for early freighters, which lies in the center of Dixie valley. Just three miles beyond the station a dirt road branches right to what is left of the once-hopeful camp of Fairview—a reinforced concrete bank vault, house foundations and cellar holes, and broken glass.

A few miles farther, on the highway, Mrs. Price flagged down an automobile headed toward us. It was Mrs. Buckner with her son. Beulah proved to be extremely enthusiastic about rock collecting, as we had gathered from her letters. After the death of her husband two years before, she explained, she had been unable to "get her feet under" her. When her boys bought a geiger counter and started prospecting for uranium, she went along "to prospect for beauty and a new life. We have found nothing of commercial value, but I get a million dollars worth of pleasure every time we go. Best of all, our enthusiasm has touched many

others and they too are finding joy in Nature," she told us.

Not long after Beulah joined the rockhunt, we passed through Westgate, then Middlegate and finally Eastgate—all of them gaps through hills or mountains which were used by the early mail and stage routes and through which Highway 50 goes today. Many of the place names through this strip of Nevada were applied first by Captain J. C. Simpson of the Corps of Topographical Engineers, U. S. Army. In 1859 Capt. Simpson explored the little known country between Camp Floyd in Utah and Genoa, in present Nevada, and laid out a wagon road between those points. Westgate and Middlegate still retain the titles he gave them, but somewhere in the years between, Gibraltar Gate became Eastgate.

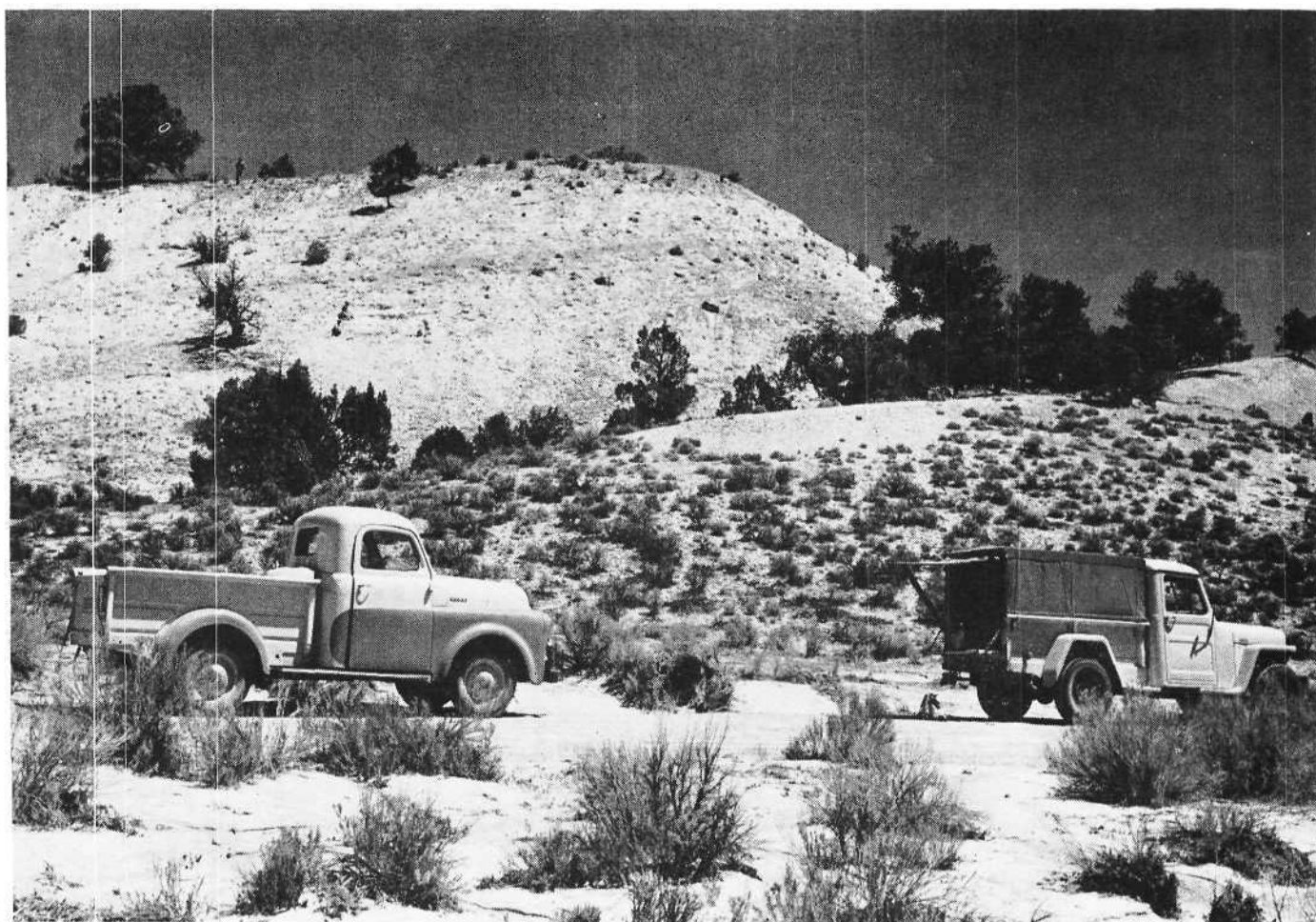
Eastgate was a noted stop on the overland stage lines. According to the Nevada State Guide, cowboys for the big ranch at this point made it a practice to introduce tenderfeet to the real West they expected to find by staging a killing, then hanging the killer in sight of the horrified stage passengers. The first real accommodation for travelers at Eastgate—a white tufablock house built by George B. Williams in 1879—still is in use just where the highway enters the canyon, its soft white stone walls tattooed with names, initials and dates of many an early visitor. When we were there, it was a service station and cafe.

FOSSIL LEAF LOG

- 0.0 Eastgate, on Highway 50, at 55.2 miles east of Fallon. Continue east on 50 to
- 2.6 Ione road. Dirt road, on the right (south). Take Ione road to
- 7.6 Fossil leaf hill to left (east) of road. White hill with small pines.



An entirely new rockhunting technique is necessary to locate the layers where the fossil leaves lie and to clean the specimen when finally exposed. A chisel or knife, brush, small shovel for digging off the overburden and paper to wrap the specimen in should be part of the fossil leaf collector's outfit.



Fossil Leaf hill, along the Ione road in south central Nevada. The hill is made up of diatomaceous earth—or diatomite—which settled to the bottom of a Nevada lake thousands of years ago.

When we were through the narrow canyon and 2.6 miles east of Eastgate, Beulah guided us to the right on a well-bladed dirt and gravel road. The little community of Ione lies at the southern end of this road. Few people live there today and the business of the town is concentrated in one building—general store, postoffice, gasoline pump and law enforcement center—and Basil Cislini is in charge of all the activities of all these divisions. But in 1864, then known as Ione City, it was the first county seat of newly created Nye County and the heart of a booming mining area.

Beulah told us that she had first come down the Ione road with her sons to investigate an old gold mine. The mine hadn't developed into anything, but they did locate agate and fossil leaves. At five miles from Highway 50, a few hundred yards before the road we were traveling divided, Beulah had me stop the car, and pointed to a white butte a short distance to the left of the road. There, she said, the leaves were to be found.

In a matter of minutes, we were up on the white, chalky slope, digging into the hillside. Under the shallow over-

burden, the diatomaceous earth was in layers, just as it had been deposited in some vanished lakebed long before. It came out easily, in long horizontal chunks, and a few inches under the surface it proved to be actually wet with the rain water which had seeped into it and had been held in the clayey stuff.

We found that an entirely new technique in rockhunting must be used here. After the pieces were removed, if they showed no leaves upon the surface, it was necessary to split them, attempting to locate the layers where the leaves were deposited. For this a broad knife blade or a thin chisel seemed the most likely instrument. Once a piece was successfully split and the leaf and its cast opened, a fine brush would have been handy in cleaning the leaves. It is possible, if the matrix separates so that only part of the leaf is exposed, to uncover the rest by carefully inserting a pointed knifeblade and snapping bits of the diatomaceous earth away. It is a delicate operation, though, for the leaf and its matrix, as we took them out damp, are as easily marred as is modeling clay. Later we found that the thin strata will part better if the matrix has dried a few days.

There is also the problem of transporting the leaves safely once a good variety has been obtained. We used all the newspaper and paper towels we had along. But—with each one wrapped carefully then packed in a box with wads of paper to see that no pressure or rubbing occurred—we brought our specimens home with almost no damage.

These leaves were like no other fossils we had seen. They appeared, rather, as do the faded brown leaves and petals of flowers pressed in an old book. And that, said Lucile, is exactly what they were—little mementos of bygone centuries that Nature had tucked between the white leaves of her book for us to treasure.

Some of the leaves were curled or curved a bit, probably from floating on water before sinking into their white clayey prison. And some are folded. One thing which surprised us—they seemed so much like modern leaves. We were sure that we recognized oak and willow and several others.

The problem of identifying the leaves and determining their age I saved for Jerry Lauder milk of Pomona College—as I do most questions of that nature

where I feel I am beyond my depth. Jerry was enthusiastic about the specimens and their state of preservation. He confirmed our thought that the leaves were of recent origin. That doesn't mean they were buried in the past century or two. Probably the old lake bed has taken thousands of years to erode down to its present butte and cliff status.

As to the varieties which we brought back, Jerry identified them as Oak (closely resembling our scrub oak), Sumach, Birch, Elm, Willow, Pine(?), Wild Cherry and Laurel. "Leaf shapes for any particular species vary a great deal," he explained, "sometimes even in the same plant. So it isn't safe to base a species identification on a single leaf. In scrub oak, for example, leaves from the suckers inside the bush are apt to be big, dark green and floppy while the leaves from the upper branches are greyish, small and spiny. That goes for most plants, so you see, we shouldn't be positive."

In his checking of the specimens, Jerry ran into something which puzzled him considerably. The matrix of diatomaceous earth in which the leaves

were buried was obviously much more ancient than the leaves themselves—probably by millions of years. Diatomaceous earth—or diatomite—is made up of the silicious skeletons of tiny water plants called diatoms. Under the microscope they look more like snowflake patterns than anything else, and one authority has figured out that they come about 40 million to the cubic inch. In the ocean they form a large part of the plankton, the drifting mass of organisms which furnishes a great deal of the food for marine life. They also live in fresh water or damp earth. The ones in which the Nevada leaves are buried originated in salt water, but the leaves are land leaves and the sediments in that area are supposed to be fresh water.

That's the sort of contradiction Jerry likes to work with, and he had an answer figured out. The diatoms were laid down in great beds during one of the periods when seas covered Nevada. Then the land rose from the ocean and erosion went to work. It reached the diatoms, the beds were dissolved and washed into a new valley to form the bottom of a new lake. And leaves from the trees which grew along the water-

courses or around the lake fell into the water and in time were buried in the lake sediments. Finally the lake dried up and its bed was eroded to expose the leaf-bearing strata.

Diatomite, incidentally, is used for many commercial purposes including polishing powders, filters and insulation. The leaf hill, according to our most recent report from Mrs. Buckner, has been filed upon for possible future development, but there is no objection to collectors obtaining any reasonable number of specimens.

After a morning of shoveling and opening our prizes, we returned to the cars for lunch. Mary Price had prepared one we can recommend unreservedly for rockhound groups. On the tailgate of their pickup she set out a plate of broken-up corned beef, another of thick slices of tomato and a third of thin slices of sweet Spanish onions. We took bread slices, and stacked up sandwiches to our own specifications. With hot coffee or cool drinks, fruit or candy bars, it seemed an ideal field trip buffet.

Later Beulah guided us to the agate areas, which lie on the hills and ridges some distance behind and beyond the fossil leaf butte. Most of it was creamy, greyish or brownish and a good deal seemed to contain root or fiber inclusions. There were bits of agate and carnelian. Some of the same type of cutting rock may be found on the slopes of the fossil leaf hill, apparently having weathered down from a thin top stratum of conglomerate overlaying the diatomite.

So far as I am concerned, those beautiful fossil leaves are the attractions of this field trip. They will be prizes in anyone's collections. But I hope that rockhounds who visit the fossil leaf hill on the Lone road will remember that it took a great deal of work and cooperation to make those leaves available to you. First think of all the diatoms that had to live and die, and of the western part of our continent being shouldered up out of the sea, and of thousands of seasons of erosion, of trees living and dying, of more erosion, and drouth and then more erosion.

Then someone like Beulah Buckner had to come along and discover them—someone who felt it was her obligation to share the beautiful things she found with you. Then we had to photograph the field and map it and tell you how to find it. But the chain of cooperation that makes a field trip a real and lasting success is not yet complete. The final and the key link lies in the hands of the rockhounds who visit a field, and depends upon what they do there.

Picture-of-the-Month Contest

Seen through the lens of a camera, there is no more colorful land on earth than the desert Southwest. Here, the greens and blues of high mountain elevations and fertile oases blend with the reds and yellows and tans to be found in the mineralized hills and lowlands, and with the purple haze and the brilliant coloring of the late afternoon sunsets.

It is for the purpose of bringing to desert readers the best of the pictures taken by thousands of camera fans every month that the Desert Magazine offers prizes for the best prints submitted to the magazine staff.

Entries for the February contest must be in the Desert Magazine office, Palm Desert, California, by February 20, and the winning prints will appear in the April issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5.00. For non-winning pictures accepted for publication \$3.00 each will be paid.

HERE ARE THE RULES

- 1—Prints for monthly contests must be black and white, 5x7 or larger, printed on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—All entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

The Desert Magazine

PALM DESERT, CALIFORNIA



Tumacacori Mission as it appeared in 1822. This diorama in the Tumacacori museum pictures the nave at the height of its beauty, with Indian worshippers kneeling to receive blessing in a short-lived period of peace and prosperity.

Forsaken 80 Years, Mission Still Lives

By BEULA M. WADSWORTH

Photographs courtesy
National Park Service

AFTER AN absence of 10 years, it was with a sense of suppressed excitement that my brother, Wade, and I approached the ancient mission church of San Jose de Tumacacori. We felt a strong attachment for the historic cathedral with its unfinished bell tower and the great dome built by the hands of the padres and their Indian neophytes 130 years ago.

We had motored here, 48 miles south of Tucson, on a smooth highway that ribboned along the valley of the Santa Cruz River, mountain ranges shouldering up distantly on either side. "What a contrast," Wade had com-

mented, "this beautiful road compared with what the horse trail must have been two and a half centuries ago when Father Kino traveled over this very ground on his missionary journeys."

Eusebio Francisco Kino was the Jesuit scholar and explorer, the saintly, zealous, resourceful man of affairs who brought the first civilized life to the Southwest. In 1691, at a spot east of what is now the ruin of Tumacacori Mission, he conducted the first Christian services in the area.

Pima Indians had heard of Father Kino's beneficent works in establishing a chain of missions south of the

Deserted by priest and parishioner alike, the ancient Mission San Jose de Tumacacori withstood storm, sand and plunderers' raids for 80 long years. Then, in 1908, the mission grounds were set aside as a national monument. The mission was restored, a museum erected, and a happy ending was written to a story which nearly read tragedy.

present Mexican border. Bearing crosses, they had come to him near Nogales and pleaded that he come to their villages. Among those villages were Tumacacori and Bac, where the Mission San Xavier del Bac now stands near Tucson.

In excited anticipation of the good priest's visit, the Indians at Tumacacori erected three brush shelters for him and his companion, Father Salvatierra, and their cavalcade. One arbor was arranged as a chapel, another as a sleeping room, the third was a kitchen.

In accepting the invitation, the black-robed Fathers had intended only an

inspection trip, planning to conduct but a single religious service at each village. However, they found the Indians so enthusiastic and their needs so great that the trip led to a remarkable expansion of missionary activities throughout Pimera Alta—now Southern Arizona.

Father Kino proved to be a practical leader of the tens of thousands of natives he sought to convert. He had every thought for them. Aside from religious instruction, he taught them building, planting and harvesting. He urged them to raise cattle from herds he had brought up from Mexico. He instructed them in methods of defense against their enemies, the Apaches.

Tumacacori continued as a *visita*, or visitor's place for priests, until 1767, when a Spanish decree expelled the Jesuits from the country. The Franciscan priests who succeeded the exiles vigorously took up their work and developed an ambitious church enterprise, the remains of which we see today. Completion of the building excepting the bell tower for which they may not have had money to finish, is believed to have been in 1822.

Then, almost immediately, came tragedy. Mexico, having won her independence from Spain, withdrew financial aid from this and all the missions. Abandonment by the last priest occurred in 1827, and the set-

tlers and soldiers deserted the area soon after.

Tumacacori, thus forsaken, suffered for 80 years from the elements and from raids of Apache Indians, vandals and treasure hunters. However, better days began in 1908 when the United States government set aside the Mission and grounds as a National Monument. Under the National Park Service, vital and substantial repair work has been done. A permanent custodian has been maintained since 1929, and in 1937 a small but distinctive museum was built in the picturesque architecture of the Sonora missions.

The fluted arch and hand-carved door of the museum entrance, which was reproduced from San Ignacio's, one of the Kino missions in Mexico, gave us admittance to the registry office and the foyer, which in turn led us to the exhibit rooms. A cloister beyond that opened upon a flower-filled garden, replica of an old Spanish mission garden.

Everywhere in the museum we met gentle surprises. First, there is a large picture window which frames like a painting the actual church with its imposing buff-colored facade. Associated with the window is a miniature replica of the entire original layout when proud Tumacacori Mission was at the height of its achievement. There are represented the church, the quad-

rangles, houses for servants, barns, stables, storerooms, mortuary chapel and cemetery, as well as the orchard and canals for the water system. It was interesting to compare, from one vantage point, the miniature with the actual church and the crumbled remains beyond.

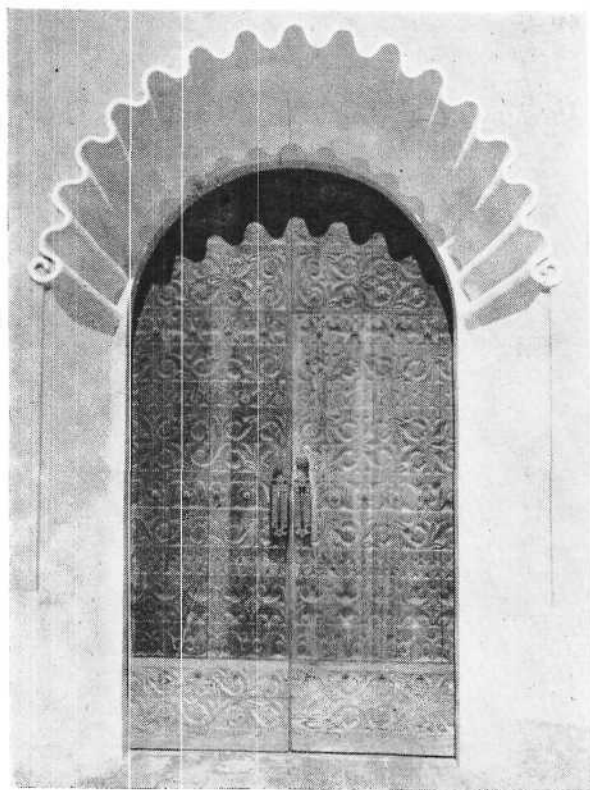
In another museum room we were intrigued by a diorama which portrayed in three-dimensional detail the interior of the church at the period of its near-completion in 1822. The miniature had the altar, pulpit, paintings and statuary of the church. Even the flicker of candles and the strains of organ music fell over the figures of Indian neophytes kneeling in prayer.

Exhibit to exhibit, room to room, we were able to relive chronologically, through relics, maps, paintings and dioramas, the entire history of Tumacacori. Depicted here were the various occupations pursued at the mission in later times—silver mining, gardening, harvesting, handicraft and trading.

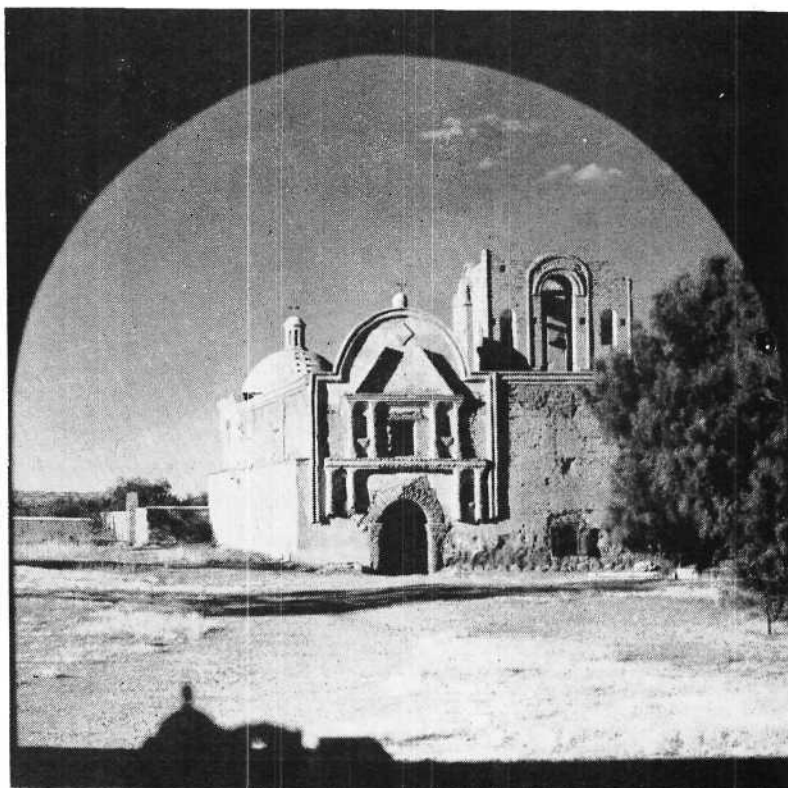
After our self-guided educational journey we were ready and eager for the climax—seeing again the actual church and other historic remnants.

Our guide, Earl Jackson, superintendent of the monument, gave us generously of his considerable fund of information. He first pointed out the massiveness of the adobe construction. In wonder and humility we observed these walls. The baptistry, which is

San Ignacio's in Mexico was inspiration for the hand-carved doors and fluted arch which provide entrance to the Museum.



San Jose de Tumacacori Mission church as seen through an arched picture window in the museum. The bell tower was never completed, presumably for lack of parish funds.



the base of the tower, is eight to nine feet in thickness. Other parts of the church have wall bases averaging five and a half to six feet in thickness.

We tried to visualize the priests in their swaying brown robes going about among their devout crews of untrained but intelligent Indians, inspiring them to do this arduous work.

The workers had only crude wooden shovels to dig ditches for bringing water from the river to the center of operations. They had to mix dirt on the site with water and straw for sun-dried bricks, or for the stronger fired bricks for use at points of greatest stress. There were seven different shapes of bricks for various uses, to be layed with mud mortar and surfaced with lime plaster. It must have

been heavy work dragging the huge pine logs long miles from the mountains for beams of the flat roof of the church. All this was done by primitive men to honor the white man's God.

The interior of the nave is now pathetically scarred with holes and brown areas where plaster is missing; but the original remnants of the side altars of the nave, which once were surmounted by statues of saints, are there, as well as certain pilasters and a wide arch framing the place of the original high altar, long ago destroyed.

Miraculously, the sanctuary dome is preserved, this a foot-thick shell of burnt bricks. We could see traces inside the dome of painted ornamentation that might have been a turquoise

border with festoons of pomegranate blossoms.

Later returning to the museum's diorama of this interior, we appreciated more the sense of art displayed in the bright colored plasters, the decorative bands and borders, the moldings for pictures, the plaster gables above statues and the niches, statuary, relief work and painting which ornamented the high altar.

We left Tumacacori Mission with feelings of pride and humility. We had seen one of the remnants of the cultural beginnings of our American Southwest. That this monument, threatened so often by history, stands today writes a happier ending to a tale which might have read tragedy.

Code of Honor in Utah . . .

By HAROLD GLUCK

THE PONY EXPRESS was doomed in 1860 when Congress directed the Secretary of the Treasury to subsidize the building of a telegraph line from Missouri to San Francisco.

Hiram Sibley, president of the Western Union Telegraph company, and his associates organized the Pacific Telegraph company to start at Kansas City and build westward. On the Pacific coast the Overland Telegraph company was formed to build eastward from San Francisco.

The meeting point was to be Salt Lake City. As an incentive to speed the construction it was agreed that the first company to reach Salt Lake would receive a bonus of \$50 a day for the lapse in time before the other company completed its part of the line.

The building involved no serious engineering difficulties. One crew dug the holes, another followed with the poles, a third outfit distributed insulators and attached them to the poles and the wiring crew followed.

The construction went smoothly until Jim Street made a contract with the Mormons to supply poles. He had a hundred sub-contractors working under him, and the Mormon crew was an important link in the organization. But soon the Mormons found their contract was not profitable. One by one they quit work and drove their teams off the job.

When Street reminded them of their contract they replied that they would like to see a Gentile force a Mormon to fulfill a losing contract in Utah. But they did fulfill it, and here, in Jim Street's words, is the story:

"I was in dismay. I was under heavy bonds to complete my contract in a given time, and this disaster looked very much like ruin. It was an astounding thing; it was such a wholly unlooked for difficulty that I was entirely nonplussed. I am a business man—have always been a business man—do not know anything but business—so you can imagine how like being struck by lightning it was to find myself in a country where written contracts were worthless!

"That main security, that sheet-anchor, that absolute necessity, of business. My confidence left me. There was no use in making new contracts—that was plain. I talked with first one prominent citizen and

then another. They all sympathized with me, but they did not know how to help me. But at last a Gentile said, 'Go to Brigham Young. These small fry cannot do you any good.'

"I did not think much of the idea, for if the law could not help me, what could an individual do who had not even anything to do with either making the laws or executing them? He might be a very good patriarch of a church and preacher in its tabernacle, but something sterner than religion and moral suasion was needed to handle a hundred refractory, half-civilized sub-contractors. But what was a man to do?

"I thought if Mr. Young could not do anything else, he might probably be able to give me some advice and a valuable hint or two, and so I went straight to him and laid the whole case before him. He said very little, but showed strong interest all the way through. He examined all the papers in detail, and whenever there seemed anything like a hitch, either in the papers or in my statement, he would go back and take up the thread and follow it patiently out to an intelligent and satisfactory result. Then he made a list of the contractors' names. Finally he said:

"'Mr. Street, this is all perfectly plain. These contracts are strictly and legally drawn, and are duly signed and certified. These men manifestly entered into them with their eyes open. I see no fault or flaw anywhere.'

"Then Mr. Young turned to a man waiting at the other end of the room and said, 'Take this list of names to So-and-so, and tell him to have these men here at such-and-such an hour.'

"They were there, to the minute. So was I. Mr. Young asked them a number of questions, and their answers made my statement good. Then he said to them, 'You signed these contracts and assumed these obligations of your own free will and accord?'

"'Yes.'

"Then carry them out to the letter, if it makes paupers of you! Go!"

"And they did go, too! They are strung across the deserts now, working like bees. And I never hear a word out of them."

The contracts were carried out to the letter—thanks to the code of honor which made Brigham Young one of the great leaders in American history.



Steve Harrison, deep sea diver who came to Hoover dam to do an emergency job for the U. S. Bureau of Reclamation. His helper is attaching the breastplate preparatory to submersion.

By M. G. MASTIN

Photographs by Mark Swain

DIVING IN the turbulent waters of the tailrace at the powerhouses below Hoover dam on the Colorado River is not like diving in the ocean, according to Steve Harrison, master diver, of Long Beach, California.

The Bureau of Reclamation is currently engaged in extending the concrete truckway and crane tracks downstream from one of the powerhouses in order to provide more working space. For proper support, concrete foundations must be placed on bed-rock at the bottom of the tailrace. Harrison was engaged to build a cofferdam from the river bottom to a point above high-water mark. When this is finished, the water inside the cofferdam will be

pumped out so that workmen can install the foundations.

When I first saw Harrison he was standing on a ladder about ten feet below the surface. He had a hose in his hand through which a heavy concrete mix was being pumped to fill cracks in the river side of the cofferdam. Despite the considerable weight of lead in his shoes and in the belt worn around his waist, the violent motion of the waters around him caused the ladder to sway in a most alarming fashion. The water was so clear that every motion could be clearly seen.

As he worked his way along the face of the cofferdam, he reached a corner and disappeared from my sight, although his location could still be followed by the stream of bubbles rising from the back of his helmet. His helper stood on a small platform over the water, talking to Steve from time to

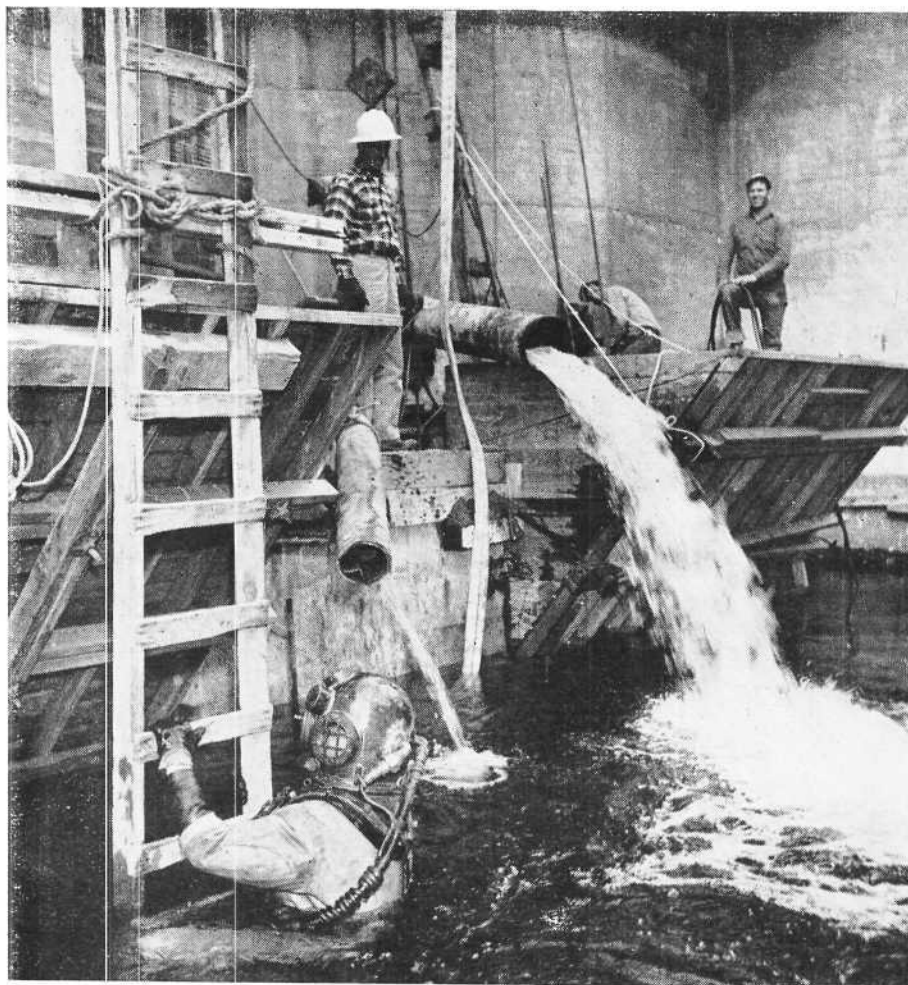
time on a public-address system hung to the adjacent wall, from which wires ran along the air hose to a microphone in the diver's helmet.

Deep Sea Diver on the Desert

Twice, while I watched, Steve climbed a ladder to the platform, where his helper removed his helmet. Later it was learned that the principal reason for this procedure was to give him a chance to get warm. Although he wore several sets of "longies" and two suits of coveralls, prolonged immersion in the river at 55 degrees numbed him so much that it was difficult to work.

While the ocean is about as cold, in deep water, there is always a warmer layer at the surface, so that when a diver becomes chilled, if working at depth, he simply rises to near the surface for a few minutes, to warm up. This does not work in the Colorado, because the water is so turbulent it is as cold at the surface as it is on the bottom.

At noon-time, and after two helpers had assisted him in removing his helmet, breastplate, weighted belt and shoes, and diving dress, Steve came up to the truckway for lunch and I had a chance to ask a few questions. After



discussing the roughness and coldness of the water, his first comment was about the fish in the river. Apparently trout and other freshwater species are no less curious than those found in the ocean. They gather around a diver in twos, threes and dozens, and remain staring at him unless he waves an arm to scare them off. Then they are soon back. One big fellow persisted in staring him in the eye, through his face-plate.

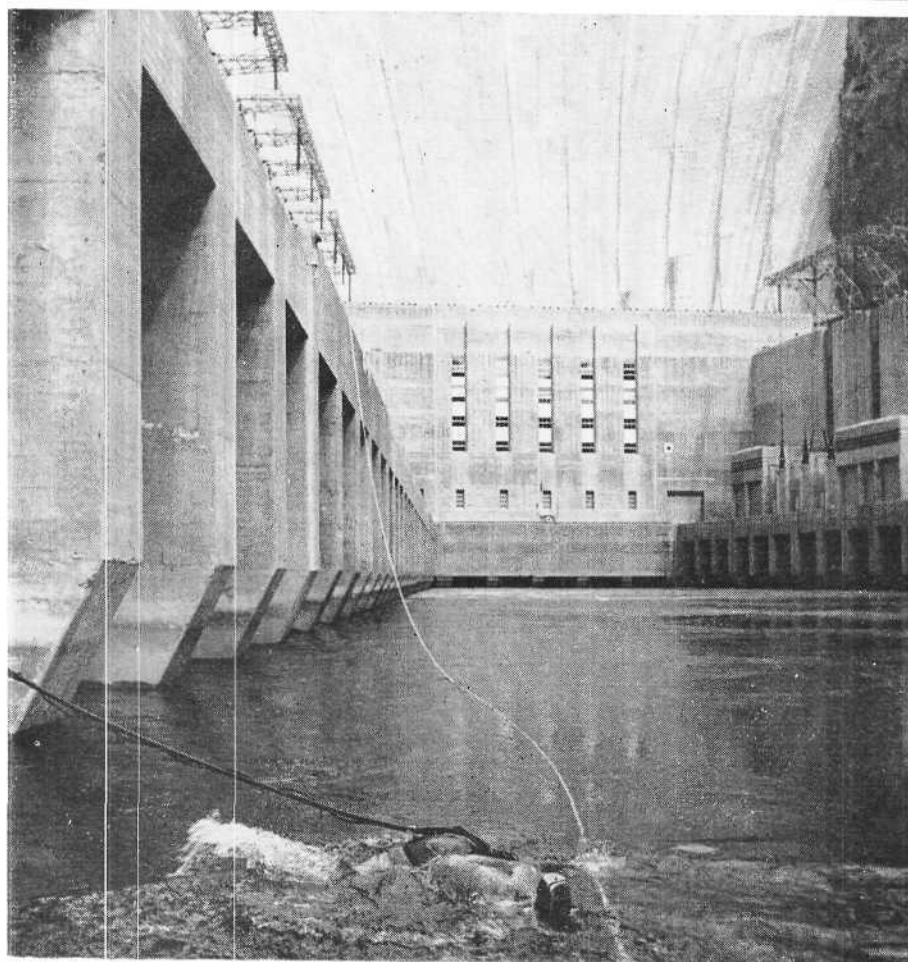
Besides trout up to 24 inches in length, and an occasional carp, Steve particularly noticed the Colorado minnow, a strange, humpbacked fish sometimes weighing as much as 15 pounds, and which, according to the authorities, is found in no other river. One of the trout, a specimen weighing about three pounds, had recently been hooked. It had a strong piece of fish-line tied through its gills. When it came near, Harrison reached out slowly, seized the cord, and after climbing to the surface, handed the fish to his helper—a rather unusual way to catch a dinner!

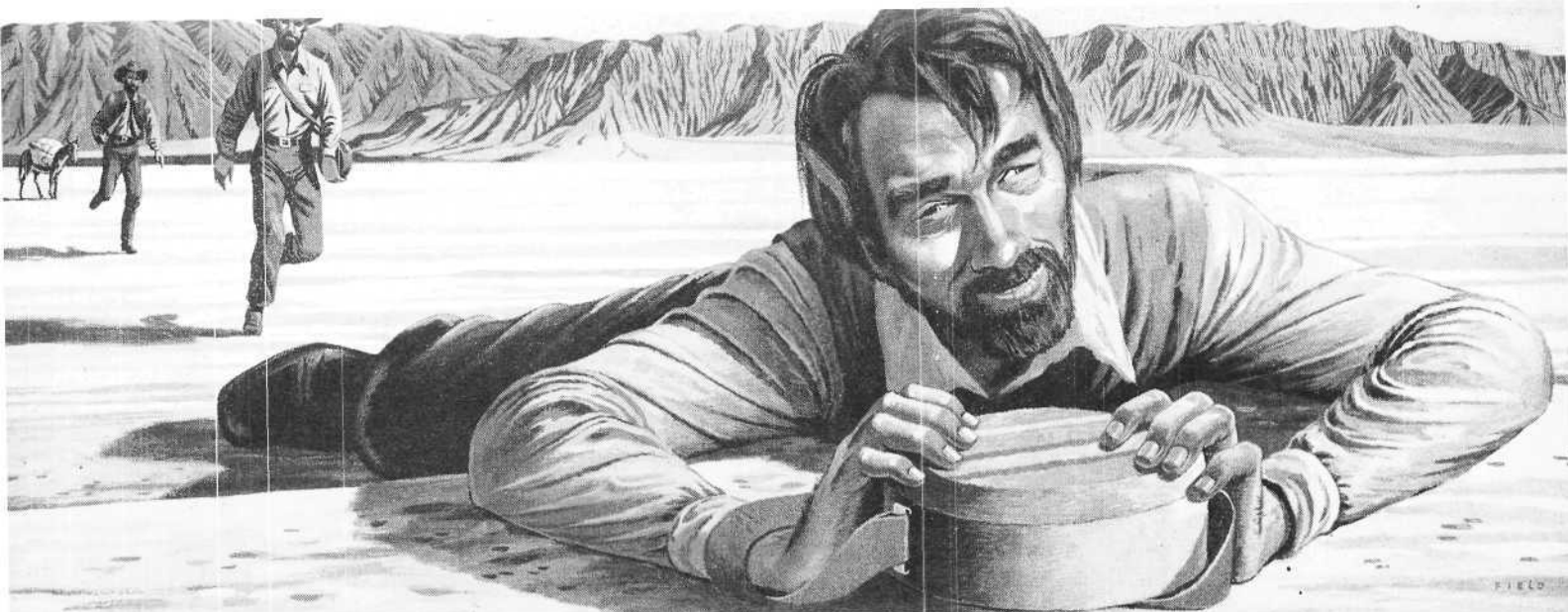
Steve would like to remain in this area, as the surroundings are so picturesque, and the water is so clear and clean. In his opinion these factors outweigh the coldness of the water and the boisterous currents he encounters, as well as the heat of the summer sun. Last summer while doing some preliminary work at the dam, he found that his helmet would get so hot, when not submerged, that the beeswax used to cement the microphone in place would melt, allowing it to fall out of its socket. He finally had to wedge it in place with rubber strips.

One of the helpers told me that Steve had recently fallen off the ladder, landing on the bottom wrong side up. He reached out and closed his air outlet valve, thereby inflating his suit, and promptly shot to the surface. His helpers hauled him to the ladder by means of his air hose, where he went on working as though nothing had happened.

Above—Steve Harrison does his under-water job with two helpers. The one on the right is paying out the hose, while the one next to him at the microphone is carrying on conversation with the diver.

Below—Once when he fell off his ladder Steve inflated his diving dress and immediately rose to the surface where he was bailed out by his helpers.





Two prospectors found Long lying in the sand—exhausted, burning with fever and dying of thirst.

The Lost Shotgun Mine

By GUS WIRT

Illustration by Ted Littlefield

TO UNDERSTAND the story of the Lost Shotgun mine, you have to be familiar with the Sheep Hole mountains and the surrounding desert.

These mountains are rough to travel and water is scarce. As far as I know, there is only one reliable spring, that at the Sheep Hole mine, on the extreme end of the range at the pass above Dale Dry lake between Twentynine Palms and Amboy. Many of the old mine shafts and tunnels are full of water and there is a good well in the bottom of the big drywash.

East through the mountains there isn't any water. Desert surrounds the mountains and closes them off in a tight, hot wasteland. It is easy to understand why there aren't more mines there.

Old-time prospectors shunned that country because of the scarcity of water. I know of only one man who prospected there. I asked Phil Sullivan, the old miner of Twentynine Palms, where he would prospect if he were young again. Phil used to come down to the shop and talk to me for hours. He always said, that given youth, he would strike out for the Sheep Holes.

Phil didn't tell me the story of the lost mine. I doubt whether he has ever heard it. I pieced the story together from yellowed letters found in an old trunk.

My uncle and I were remodeling a house in El Dorado, California, when we came across the ancient tin chest, collecting dust in a forgotten corner of

the attic. The house, long since passed from the hands of the original owners, had been bought by a man living in Placerville. He knew nothing about the trunk and, when we showed interest in it, gave us permission to carry it home and look through the contents.

From the letters, we gathered that L. O. Long and John Carthright during the 1860's worked placer ground along the Consumes river south and west of El Dorado. John Carthright had moved to Fresno in 1871 and the letters were an account of the travels and prospecting of his former partner. References were made to the "Palms," "Dale" and the "Sheep mountains." We translated these as Twentynine Palms, the old Dale mining district east of there and the Sheep Hole mountains. One letter told of a miner leaving Dale for Amboy and of travelers finding him, dead of thirst, somewhere on the north slope of the "Sheep" mountains. Another traveler left Dale for Cottonwood springs and died of thirst somewhere in Pinto basin. Sparsely settled today, that country was dangerous in the 1870's.

The last letter was dated June, 1873, and was posted in San Bernardino. It wasn't in the same handwriting nor did it use the same type of expression as did Long's previous communications. Long evidently was not very well educated and his own letters were rather difficult to read. This last one, dated June, 1873, was well-written in good English, probably dictated by Long to some doctor or friend in San Bernardino.

A mysterious spring lies hidden in the Sheep Hole mountains, near the shotgun cached by a dying man. The spring marks the rich placer ground of L. O. Long, who prospected the Sheep Holes in the 1870's. Gus Wirt tells the story of Long's "Lost Shotgun" mine, as he read it in letters yielded by an old tin trunk.

In it Long revealed that he had brought out a total of 100 ounces of gold from his workings and planned to return as soon as he was well enough to travel. His last trip out, he had fallen and bruised his leg and side. Two prospectors had found him wandering in the desert near the "salt lake" or Dale Dry lake. The injured man couldn't carry his shotgun, so he cached it among the rocks. From this incident, my uncle and I came to call his lost placer ground the "Shotgun" mine.

Long's water was soon exhausted, drained by the excessive thirst of the fever from his wounds, and he was near death when found. Evidently his injuries were severe and, aggravated by the strain of the long trip to civilization, had proven fatal. A letter from the marshall at San Bernardino, dated June 22, 1873, inquired whether Carthright would arrange for the burial of his friend.

No mention is made of any burro, so we assumed that the prospector had made the trips on foot. When he first found the placer deposit, he had written Carthright about it and located it in a "brush canyon" about 15 miles almost due east of the "salt lake."

There was a small spring that he had dug out and walled up, and he reported many quail and sheep using it. The placer ground was "around the bend" and just below the spring.

Although he made no mention of how he was securing the gold, Long

probably was using a hand washer or "bib," washing out the gold by pan at the spring after blowing away the lighter material.

My uncle and I often talked of the letters and the lost Shotgun mine. We planned a trip into the Sheep Holes,

but something always came up to postpone it. My uncle had difficulty getting away from his work, I wouldn't go alone, and we didn't want to take on any partners. We had been lucky enough to locate the ground, and we wanted first chance at it.

Last winter my uncle died at El Dorado, and I fell heir to the old trunk and its letters. In addition to them, I have several other clues to the Shotgun's location. Talking to Phil Sullivan some time before we found the trunk, he told me of coming across a fine English shotgun and several shells under a rock ledge in the Sheep Holes. He said he never did figure out who left it there or why, because it was a long way from water and game. Later, after I knew about Long's mine, I asked Phil more about the shotgun. He recalled he had found it in 1925 at a place east of Dale lake back in the hills 10 miles or so. I repeated to Phil what I had learned of Long and he said that he couldn't remember ever having seen a spring in those hills, and he had done a good bit of tramping through them.

Another thing I remembered was a conversation I'd had with Heinie Olson at Twentynine Palms. Heinie told me about a pilot at the army field there who had seen a brush-choked canyon back in the Sheep Holes. We often discussed it and spent some hours planning a trip in there. We thought we could get one of the pilots to spot the canyon and help us locate it from the ground. Unfortunately, we never had an opportunity to go.

Well, there is the story. Heinie will tell you what he knows of the brush-choked canyon. I have told you all I know about Long and his mine; and Phil Sullivan, if he is still alive, will tell you about the shotgun and the Sheep Holes.

I still hope someday to make the trip in there. But circumstances prohibit the trip just now, and if anyone else wants a try at it, go ahead.

It will be hard to find the spring. Perhaps it may never be found. There are miles of desert country to search. I am inclined to believe it is hidden in that reported "brush-choked" canyon; find trees and there has to be water.

One thing to remember: though you are looking for a spring, you may never find it. Have at least one companion, and carry water, lots of water.

It is easy to die in the Sheep Holes. Listen to the warnings of age-yellowed letters. And remember the story of Prospector Long—who found a rich placer and lost it in death.

DESERT QUIZ

Here's a new list of brain-exercisers for folks who like to keep their minds active. A high score in this Quiz calls for some knowledge of a wide range of subjects—botany, mineralogy, geography, history and Indians. But they cannot send you to jail for getting a low score, and you'll learn something from these questions and answers. A fair score is 12 to 14, 15 to 17 is good, 18 or over is tops. The answers are on page 29.

- 1—A rattlesnake adds a new button to its tail—Once a year . . . Twice a year . . . Every time it changes its skin . . . Scientists do not know the answer . . .
- 2—Sotol is the common name of a desert—Mineral . . . Plant . . . Reptile . . . Rodent . . .
- 3—Going from El Centro, California to Yuma, Arizona, one would travel on—Highway 60 . . . Highway 395 . . . Highway 80 . . . Highway 66 . . .
- 4—The stream traversing Zion National Park is—Kanab Creek . . . Paria River . . . Virgin River . . . River Jordan . . .
- 5—Capitol Reef National Monument is located in—Utah . . . California . . . New Mexico . . . Arizona . . .
- 6—The first colony of Mormon emigrants reached Salt Lake in — 1823 . . . 1847 . . . 1867 . . . 1870 . . .
- 7—J. Frank Dobie is best known as—A writer of western books . . . Authority on gems and minerals . . . Movie cowboy . . . A mining engineer . . .
- 8—Indians who live on the shores of Pyramid Lake in Nevada are — Navajos . . . Chemehuevis . . . Mojaves . . . Paiutes . . .
- 9—The character most widely publicized in connection with the Lincoln County War in New Mexico was — Butch Cassidy . . . Wyatt Earp . . . Geronimo . . . Billy the Kid . . .
- 10—There are approximately 25 minerals from which quicksilver is extracted, but the most common one is—Apatite . . . Hematite . . . Manganese . . . Cinnabar . . .
- 11—Hadji Ali (Hi Jolly) was a—Camel driver . . . Yaqui chieftain . . . Navajo god . . . Mountain man . . .
- 12—Canyon del Muerto is a tributary of—The Colorado River . . . Canyon de Chelly . . . Bryce Canyon . . . Oak Creek Canyon . . .
- 13—Chief industry of the Hualpai Indians in northern Arizona is—Sheep raising . . . Weaving . . . Pottery Making . . . Cattle raising . . .
- 14—According to legend the Enchanted Mesa of New Mexico is the ancient home of the—Zuni Indians . . . Taos Indians . . . Hopi Indians . . . Acoma Indians . . .
- 15—To reach Meteor Crater in northern Arizona you would take—Highway 66 . . . Highway 93 . . . Highway 60 . . . Highway 70 . . .
- 16—The Shivwits Indian reservation is in—Arizona . . . Utah . . . New Mexico . . . California . . .
- 17—The grain most commonly cultivated by the Hopi Indians is — Wheat . . . Corn . . . Barley . . . Milo Maize . . .
- 18—The Indians whose tribal lands have been inundated by a reservoir on the Colorado river in recent years are — The Yumas . . . Pimas . . . Chemehuevis . . . Cocopahs . . .
- 19—The home of The Dons, known in the Southwest for their annual Lost Gold Trek, is at — Tombstone . . . Borrego Springs . . . Phoenix . . . Las Vegas . . .
- 20—Badwater is the name of a waterhole in—southern Arizona . . . Imperial Valley . . . Death Valley . . . Great Salt Desert in Utah . . .

Kayba Sells Her First Rug

By SANDY HASSELL

Illustration by
Charles Keetsie Shirley
Navajo Artist

IN ALL of Kayba's 13 years there had never been another day like this one. It almost seemed that she had been looking forward and preparing for it since her earliest recollection. This was to be her first visit to Gallup, the place by the bridge.

Her grandmother, mother, sister and others had told her that it was a place of many houses but she had no idea there could be so many houses in one place. The valley and the hills on all sides were covered with them. She knew there were more than she could count. Didn't these people have any sheep and if they did where would the sheep find something to eat?

Everyone she knew had been here many times and talked about it. Each year when the corn was ready to eat they all went here to show their pretty rugs and fine silver jewelry. Not only the Navajos came but Indians from other tribes who lived far away. She had seen them come by her home in wagons, automobiles and on horseback. She had wanted to go with them but always she had to stay at home with grandmother and care for the sheep and goats.

The white doctor at the mission with whom she and her sister Mabah had come to town said he was going back home at sundown and that they must be at this place and ready to go when he was.

They were to meet at Laughing Man's trading post and here they hoped to sell their two small rugs for cash. He wouldn't pay as much for them in cash as he would in trade but they did not want groceries. They wanted money so they could go to the big stores on the other side of the bridge and buy things that Laughing Man did not have in his store. Laughing Man paid cash only for the very best. Her rug was the prettiest she had ever made but she knew it was not as good as Mabah's. She had it wrapped in a clean flour sack and tucked snugly under her left arm. The shawl over her shoulder completely hid it and no one could tell it was there. Even the doctor hadn't noticed it.

There were no Indians in the trading post when they entered. Mabah had been here many times before and knew Laughing Man well. She laid her rug on the counter but did not



Never had Kayba seen anything so beautiful as the silver bracelet with its deep blue turquoise stone.

unwrap it. She told Laughing Man that she wanted money for it, and why.

Laughing Man listened without comment. He unwrapped the rug and spread it on the counter. It was weighed and measured and then placed under the counter out of sight. Money, both silver and paper, was taken from a drawer under the counter that rang a bell when it was pulled out. The money was counted and spread on the counter where the rug had been. Mabah counted it but didn't pick it up. That would have completed the sale. She wanted more and said so. Laughing Man was positive it was enough. He turned around and started to move some cans of fruit on the shelf. With a little sigh Mabah picked up the money. Anyway she couldn't expect

too much when she was getting cash.

Now the trader was looking straight at Kayba. His hand was extended with the palm up. "Let me see the rug you have little sister."

How did he know she had a rug? Could he read her thoughts? Her forehead suddenly became wet. She started to wipe the sweat off with her forefinger, then she remembered the white handkerchief her sister had given her and told her to use instead of her hand or sleeve. She looked at Mabah to see if she approved but her sister was laughing. How she wished that Laughing Man would buy her rug and pay her cash. Even if he gave her less than he did for Mabah's it would be all right. It was the same size but it was not as pretty. It seemed that she had just

strength enough to place the rug on the edge of the counter.

Laughing Man took the rug out of the sack and laid it on the counter. He weighed and measured it but did not place it under the counter. Wasn't he going to buy it? Yes, he was, for the bell rang and he was pulling out the drawer that had the money in it.

"This is a beautiful rug little sister—far prettier than the one your sister made." He was counting out the money for her on top of the rug. "And I am paying you two-bits more for it than the one I bought from her."

What was the matter with her hands? Couldn't she pick up the money and why was Mabah shaking her?

"And this is your candy that I am putting in the sack little sister but you must save some for your little cousin who is herding the sheep today and some for your grandmother and mother."

Her face became cool. Now she knew that he was a nice man for he was giving her candy to take home to grandmother. She liked him because he called her little sister and she was no longer afraid.

And wouldn't the ladies like to look at his pretty silver jewelry set with turquoise before they went across the bridge to the big stores? Yes, he knew they had no money to buy jewelry with now, but didn't all Navajos like to look at it. They would see many beautiful things in the big stores but no jewelry like this.

There was a pretty little silver belt like the one Mabah was wearing. Some day when she had enough lambs to sell she was going to buy one. And what a beautiful necklace and so many pretty bracelets and rings she didn't know which one she liked the best. She wished she had some of those pretty silver buttons that had turquoise set in them to put on her yellow plush blouse. What fun it was trying all of them on and wishing that she owned them.

Now what was Laughing Man taking out of the big iron box that had such thick doors? It was a leather bag and he was taking a bracelet out of it and handing it to her. Never before had she seen anything so beautiful. It had only a single turquoise in it but it was the bluest of blues and the silver was heavy. All the other jewelry was forgotten. She wanted it more than anything she had ever seen. "Oh sister I want to buy it."

"Hush, foolish little one. It is only Navajos who are wealthy and have lots of sheep who can buy a bracelet like this. 'It might cost a hundred dollars.'"

"But I could weave rugs for it and I would work a whole year."

"You could little one and I would help but the rugs we weave must be sold for food. I will ask him how much it costs."

Only \$20 but Kayba knew she would never have that much money. She was sure she would never see another one so pretty. Maybe he would keep it until she had many sheep. He didn't think he would sell it soon for a tourist wouldn't pay that much money for it and Navajos didn't buy it, for money was so hard to get.

Now she thought about the little package grandmother had given her this morning and what she had said. It was something small folded in paper and had a cloth tied around it. Grandmother had said if she saw something she really wanted she must wish for it four times, then if she opened the package and placed what was in it by the side of what she wanted she would get her wish. Kayba had faith in

grandmother for she seldom joked. She told Mabah what grandmother had given her and what she had said. She was certain the trader didn't hear for he was busy putting away the jewelry.

Kayba made her four wishes in a hurry for she was certain she wanted this bracelet. From her beaded bag she took the package and placed it beside the bracelet. Her hands were shaking so she could hardly untie the cloth. Before she had finished unfolding the paper a big bright penny had slipped out and fallen on top of the jewelry case. It was the largest penny she had ever seen and it made a ringing sound on the glass like the bell at the mission. What made Mabah draw in her breath like someone had thrown cold water on her?

Laughing Man was now talking to her. "Yes little sister your grandmother was right. You are going to have your wish. That is a \$20 gold piece."

Hard Rock Shorty of Death Valley



"We're looking for that place they call the Devil's Golf Course," announced the driver of the big station wagon which had just stopped in front of Inferno service station. "We brought our golf clubs along because this is one of the few places in California we've never played before."

"You'll have to ask Hard Rock Shorty about that," replied the grease monkey who was on duty that morning. "I'm a newcomer in these parts."

Hard Rock was dozing on the much-whittled bench under the lean-to porch of the Inferno store.

"Hey Shorty, this feller wants to know about the Devil's Golf Course," shouted the attendant.

Shorty opened his eyes and looked the strangers over. Obviously they were dudes on their first visit to Death Valley.

"Ain't no golf course in Death Valley," said Shorty. "We don't go in fer them hifalutin' things up here. This is a workin' man's country."

"But this guide book says it's

a golf course," persisted the stranger. "What do they mean, bringing us Americans out here 300 miles from home to play golf when there isn't any golf course?"

"They jest call it that on account o' them funny lookin' salt crystals down there," Shorty answered. "Yu oughta go down and see 'em if you caint play golf. They're worth lookin' at."

"That's the saltiest place yu ever seen. Onct Pisgah Bill got the idea o' sackin' up that salt and packin' it out on burros to the railroad. He figgered he could make more at that than minin' in that no-good lead mine o' his up in the Panamints."

"Bill worked a month gittin' 10 tons o' that salt over to the railroad at Ryan. Shipped it out to some refinin' outfit in Los Angeles. A few days later Pisgah got a letter from the refinery tellin' 'im to send 'em \$11.53—cause the salt lacked that much o' payin' the freight charges."

"So Bill went back to his lead mine."

DESERT CHRISTMAS--*Prize-Winning Story*

This story of a desert Christmas, written by Vivienne L. George of Chatsworth, California, was awarded first prize in Desert Magazine's "Life on the Desert" contest which closed on November 1. This experience of a desert woman whose hatred of the desert country was changed almost overnight, is typical of a transformation which has taken place in many homes in the arid Southwest during the last 100 years when the conquest of the desert country has been in progress.

By VIVIANNE L. GEORGE

WHEN THE doctor told Daddy that he had to take his choice of going to Arizona for his health or going to the grave, I think in Mamma's mind those two places were synonymous. It meant giving up all the comforts of civilization as she had known them and coming to live in a wretched little shack which was all we could afford after Daddy's doctor bills were paid.

Mamma hated the desert. The fact that there was scarcely money to exist on, let alone to go "back home," made it all the worse. She felt trapped. She used to walk up and down before the window and shake her fist at the mesa rim above.

"Look at it," she'd say, "it's like a fire-breathing monster, sitting out there brooding, biding its time till it wears us down and beats us! Someday it will win, and we'll be doomed like the rest of the desert folk eking out their days here!"

Buzzy and I never contradicted her; it wouldn't have been polite. But secretly we were enchanted with this vast new world surrounding us. We made friends with everything—lizards, burros, hawks—everything delighted us. And highly appreciated was the fact that Arizona houses didn't have screened windows! When Mamma sent us in for our afternoon naps, we could shinny out the window, and keeping the wash between ourselves and the house, slip off for an adventurous hour or two making friends with the neighbors. We loved them all indiscriminately—Mexican, Indian, cowboy, even Old Tom the prospector, camped by a spring at the head of Sheep's Canyon.

Of course we were happy to see the promise of a healthy tan creeping into Daddy's cheeks. But with each ounce of strength he gained, our apprehension grew that this paradise would be snatched out of our lives, and we would have to go back to the tame routine of "back home."

We said our prayers each night under Mamma's guidance; and then, when she blew out the light and went away, we bounced out of bed to add a fervent P.S.: "Please, God, let us stay here, at least till after school starts."

After that it was "... at least till Hal-low'e'en." Milepost by milepost we badgered the Lord through that fall and winter. When we heard from a cowboy the legend that whoever drinks Oak Creek water will always return, we made a ritual of going the first thing each morning to take a sip from the stream bed.

One day Soapy Jones stopped to water his horse from our tank. Buzzy and I swarmed out to pass the time of day, and Mamma rushed out right behind us to protect us from the "demoralizing influence of this ignorant native."

Soapy heard her. He drew himself up in his saddle and, with the dignity of the mesa itself, said, "You needn't bother shooin' 'em in, Ma'am, I'm agoin'. I reckon I and everybody else up 'n' down Oak Creek knows what you think o' us. I got this to say though: This here's our way o' life, and we love it. And I don't reckon you can say anybody sent fer ye."

Buzzy and I held our breath. Nobody, just nobody ever challenged Mamma with impunity. And now was no exception. We could almost see the wheels go 'round as she thought it over. I guess she had been so busy hating these "creatures of the desert" she had never thought of them as humans. But by the time Soapy was through speaking, she was ready for him. She said with a dignity matching his own, "You're wrong, Mr. Soapy, I was sent for—by circumstances. I have a Bible which says 'For I have learned in whatsoever state I am, therewith to be content.'"

"So far," she continued, "I may have been a bit remiss in my duty to circumstances," she paused while Buzzy and I stood open-mouthed, wondering if Soapy recognized the miraculous transformation taking place before his eyes, then she went the whole way, "Tomorrow is Christmas, the birthday of One who came to teach us all to dwell together in harmony. You may tell my neighbors that tomorrow my family and I will hold open house in His honor."

Things went into high gear after that. Mamma took Buzzy and me out

onto the mesa to gather algerita branches which, in the absence of holly, she fashioned into a huge wreath. We made long festoons of the red seeds from rattail cactus and strung screwbeans gaily colored with crayons. Mamma cut a branch of mesquite and decorated it with bright strips of quilt scraps for a Christmas tree. Branches of mistletoe were hung all around the house.

We had two chickens, a hen and a rooster which Mamma had been saving, hopeful of setting eggs in the spring; but now she killed the rooster and made up platefuls of her special pressed chicken sandwiches, a delicacy previously reserved for state occasions like when the Tuesday Reading Club would meet with us back home.

Buzzy and I looked at the plates of sandwiches and wondered if she knew just how many neighbors we had, but we didn't say anything. I guess some of the neighbors wondered the same thing, though. Pretty soon Pete Martinez' family came creaking up to the gate in their rickety little wagon drawn by two scrawny ditch-working mules. We held our breath, knowing Mamma thought the Mexicans were not even people, but by the time Pete climbed out and made a low bow, doffing his wide-brimmed straw hat, Mamma had caught sight of Baby Antonio. She smiled at him, and when he gave her back a one-toothed grin and held out his arms you could almost see her resistance melt.

Pete bowed again and said, "Senora, we have heard, my family and I, that today you make the gran' fiesta. We think perhaps you do not know it is the custom here for all who hear of it to come. So we have bring something along to reinforce with the refreshments." Six of his kids piled out of the wagon with a huge wooden platter of tamales.

When Mamma saw the folks coming over the edge of the mesa, up the wash, and down the road, she saw she would certainly need reinforcements. But since Mamma had given them an opening, the open-hearted neighbors were more than ready to come the rest of the way. The Bar

Cross' missus sent in a roast goose. The Lazy P boys rode in with a ham, and then the T Bar chuckwagon rolled in and all the boys fell to digging a pit to warm up a whole calf they'd barbecued the day before.

Things really got going then. Shorty Peters had brought his guitar and everybody was hunkered down on his heels around the fire, singing songs and swapping yarns. Pete Martinez' oldest boy and girl danced the Jarabe, and Anabel Begasonbegay, who cooked for Mrs. Nichols and called the Nichols people "her folks," sang some Navajo songs.

Even Mamma forgot herself and had a wonderful time. She sang songs from light opera and told some funny stories about when she was in college. The only trouble we had was when the Pothook boys rode in. We thought sure there'd be a fight then. Even Mamma had heard about the bad blood between them and the Lazy P, on account of so many Pothook calves always following Lazy P mothers. The Lazy P boys stood up and reached to their hips before they remembered about leaving their guns at home because it was Christmas.

But Mamma stood up between them with her feet square and wide apart like the ranch folks stand, and said slow and deliberate, almost like a western drawl: "Boys, this is my party. I'm giving it for my friends. There's nobody who's not welcome here as long as they come in peace and go in peace." Then she walked over and shook hands with the Pothook foreman and wished him Merry Christmas just like she had everybody else. Old Tom went back to telling his story about how he crawled in an underground cave and struck a vein two miles back under House Mountain. And we all ate and laughed together even though the Pothook boys shot up two Lazy P riders in a range fight only two days later.

It was late when they all left. We could hear them singing out across the mesa on their different ways home. And then we went inside and found the presents under our mesquite Christmas tree, where different ones had slipped inside and left them when Mamma didn't know. There were things like spurs and a Mexican quilt for Buzzy and hand embroidered napkins for Mamma. Last of all, 'way down underneath, we found Old Tom's present, a dirty leather poke half full of nuggets.

Mamma cried a long time after we found that. I guess it washed her clean like the thunder showers wash the air over the mesas. Then she went outside and looked up to where the Mogollon Rim was etched in clear

The Desert in Poetry . . .

MIRAGE

By JACK SPEIRS
Camarillo, California

There's a city just before me through a
shimm'rin' haze of heat.

There's a fountain splashin' gleamin' silver
water in the street.

There's a lake a-rollin' waves upon a shore
beneath the trees.

And I'm crawlin' to that city, through the
sand, upon my knees.

Through the sand that keeps a-tuggin', over
rocks that burn my hand.

While a brassy sun is glarin' on an arid,
thirsty land.

But there's water there before me—I can
see it—nearly hear . . .

Hear the sound of waves a-lappin', and the
fountain splashin' clear.

But it seems to move before me, keeps a-
movin', doesn't stay.

It's been there for near an hour and it's just
as far away.

Now it seems to be a-fadin' . . . fadin' . . .
fadin' . . . God, it's gone!

No! It's still up there before me . . . Keep
a-crawlin', crawlin' on.

I can reach it . . . Got to reach it, for there's
water there . . . and shade.

It's the sand a-blowin' in my eyes that makes
it seem to fade.

It's the sand a-blowin' on the wind, a searin'
blast of heat.

And the fountain keeps a-splashin', splashin'
water in the street.

Seems I can't go any farther . . . got to stop
and rest awhile.

Think I must be gettin' closer . . . at the
most about a mile.

I'll just close my eyes and rest them from
the desert's burnin' light.

I can make it to the city—and the fountain
—yes . . . tonight.

THE DESERT IS A GAUNT LAND

By GRACE BARKER WILSON
Kirtland, New Mexico

The desert is a gaunt land,
Yellowed, stony-ribbed;
A haunting and a want land
With stark hunger cribbed.

The desert is a bare land
When copper sun is bright;
But, oh, it is a fair land
Under white moonlight.

moonlight against the sky. After a while she said "There's a basic continuity there in that mesa that is beautiful. Just like the desert's children are beautifully fundamental and basic."

Buzzy and I didn't know what those words meant, but for the first time since we'd been here, we didn't pester the Lord with any P.S. to our prayers. Somehow we knew the desert had won. We were going to stay.

SONG OF A BOOT

By MIRIAM R. ANDERSON
San Bernardino, California

My boots hang dusty from a nail,
Crying for a mountain trail.
Crying for the space to sense
Nature's wise beneficence.
Open miles stretched far below—
Muted streams that through them flow—
Lordly pine tops guard the slopes
Dropping sharply without rope
To fence them. Not a human voice speaks
there,

But a deer poises still, and has no fear.
'Round and round the switchbacks go
Through lone sand that gleams like snow.
Breathe the horse at yonder pass—
Trees and grass will soon be past.
Above tree line! And the mind
Reels at distance that unwinds
Below. Lakes and cities, thumbnail size—
Miniatures that challenge eyes!
Oh, such grandeur I recall
From the boots now on the wall.

LONGING

By ELIZABETH SARGENT
Ontario, California

I have roamed far places of the earth
Where Nature's beauties I could share,
But now I only want the chaparral,
And peace, in desert scented air.

For I have known a desert night,
Have seen a red star hanging near,
Have felt the desert's firm warm arms
And heard her muted music in my ear.

GHOST OF AN OLD CAMPFIRE

By SHEILA O'NEILL
Fallon, Nevada

Up from far down the valley
Floating now low, now higher
Comes a wisp of smoke-grey mist,
The ghost of an old campfire.

The ghost of a sage-brush fire
By the side of the trail piled high
Against the gathering dusk
And a coyote's far-off cry.

Flinging its cheering light
Flames rising higher and higher —
Fighting the fears of the night
With swords of sage-brush fire.

Up from far down the valley
Rising now low, now higher
Comes a wisp of smoke-grey mist
The ghost of an old campfire.

Ourselves

By TANYA SOUTH

Clearly I see each sign and portent
For worth or evil yet to come.
Our good or bad reveals important
Deep traits that Destiny become.

'Tis we ourselves who are arranging
Our sulphur and our matches too,
And all our fortunes constant chang-
ing—
By how we think and what we do.

THE *Desert* MAGAZINE CLOSE-UPS

Gus Wirt makes no claims to being a professional writer, but so much of his life has been spent on the desert and his acquaintance among the old-timers is so wide that he has accumulated many interesting tales—and The Lost Shotgun mine of the Sheep Hole mountains in this issue of *Desert* is one of them.

Wirt first heard the story of the Lost Shotgun when he had a shop at Twentynine Palms. The story, he says, is true in every detail—although the location of the mine is one of the mysteries that remain unsolved.

Gus' idea of the perfect way of life is to own a little rock shop, make frequent prospecting trips—and write about what he learns in his roaming about the desert.

• • •

It isn't often that *Desert Magazine* buys a manuscript from the far eastern seaboard. Generally, the folks back east do not know the desert well enough to write about it. However, the history of the West is as well told in the libraries of New York as in the libraries of desert cities—the same books may be found both places. Hence, it was possible for Harold Gluck to become a contributor to *Desert Magazine* by doing research work in the library at New York City, where he lives and teaches history in the schools. The episode in the building of the trans-continental telegraph line across the United States, written for this issue of *Desert Magazine* by Gluck, was found in Mark Twain's *Roughing It*, copyrighted in 1871.

Gluck is a Doctor of Philosophy, specializes in research of the Old West, writes some fiction, and is an enthusiastic outdoor man, his recreating ranging from tennis to fishing, and from skiing to tennis.

• • •

Marion G. Mastin, who wrote this month's story about the deep sea diver at Hoover dam, is a chemical engineer by profession but writing is one of his favorite hobbies. He also collects rocks and desert wood and converts them into household ornaments and even furniture.

Mastin is a native of Iowa and his work has taken him all over the world. He got his first glimpse of the Nevada desert in 1936 and eventually returned to Boulder City to make his home "because I think this is the best all-around climate I have ever seen."

Richard Van Valkenburgh sold his first story to *Desert Magazine* in 1939—in fact it was the first story he sold to any publication. During the intervening 12 years he has written 40 illustrative feature articles for *Desert*.

His writing career began when he was a member of the Indian Bureau staff at Ft. Defiance, and later at Windowrock, and all of his early manuscripts were about the Navajo Indians whom he learned to know very intimately after he learned to speak their language.

Later Van left the Indian service and lived for several years at Tucson where he wrote a series of radio programs which were presented over the Tucson station KTUC for 132 weeks. For the past year he has made his home at Santa Barbara but for health reasons has done only limited writing.

In submitting the story "We Found the Lost Cave of the San Martins" for this issue of *Desert Magazine*, Van stated that his health has so far improved he plans to return to the Navajo country. "During the 13 years I lived with the Navajo I collected a lifetime of material" he writes, "the only obstacle to its publication being the need for photographs. But now I have a Graflex and when I return to the Indian country I will be in a position to get the pictures which editors always want."

Few writers know the Navajo as well as Van Valkenburgh, and *Desert's* editors will welcome more of his manuscripts from the Indian country.

Beula M. Wadsworth, author of this month's story of Tumacacori Mission, came to a crossroads decision on her graduation from high school—to be an artist or to be a writer.

Art took the lead in her earlier life, through channels of public education. Year by year her experiences as art teacher and director in Michigan built up a backlog of material which seemed worthy of publication.

She prepared her first article with illustrative photographs in a neat parcel and posted it to a strange editor. Her courage was promptly rewarded with an acceptance letter and later a check.

This turning point in her life led to writing twenty or more articles for the same editor during the next few years—every manuscript accepted.

After having made the acquaintance of the editor during a summer trip abroad, there came a letter from him suggesting that she come out to California to work as assistant editor on the magazine.

Accordingly, after two months of training for editorial work with the publishers of *The School Arts Magazine*, she became an assistant editor at Stanford.

Editing proved to be a very different kind of experience from that of teaching art in the public schools. For years she had made her own program, directing art projects and lecturing. Editing on the other hand called for a rigorous schedule conforming to the ideas of another. She was restless for the open air of free expression.

This freedom she found in the Southwest desert at Santa Fe, New Mexico, and at Tucson, Arizona. Her life in recent years has been private art teaching, designing, painting the desert scene, and above all writing on Southwest subjects. The desert is a paradise, according to Miss Wadsworth, for the artist and writer.

Barry Goldwater, who wrote the story of the Hawkeye Natural Bridge in northern Arizona for the October issue of *Desert Magazine*, was re-elected to membership in the Phoenix City Council at an election in November. Barry received the largest vote in a field of 12 candidates for the six places on the Phoenix Council.

William Caruthers, who in past years has written several historical features for *Desert Magazine* readers, was one of six western authors who were honored at a barbecue breakfast held on the golf course at Furnace Creek ranch in connection with the third annual Death Valley Encampment of 49ers December 1 and 2. A year ago Caruthers published *Loafing Along Death Valley Trails*, a book about many of the men and women who played leading roles in the early days of Death Valley. The book has had wide sale all over the United States.

ANSWERS TO DESERT QUIZ

Questions are on page 24

- 1—Every time it changes its skin.
- 2—Sotol was one of the food plants of desert Indians.
- 3—Highway 80.
- 4—Virgin River.
- 5—Utah.
- 6—1847.
- 7—A writer of western books.
- 8—Paiutes.
- 9—Billy the Kid.
- 10—Cinnabar.
- 11—Camel driver.
- 12—A tributary of Canyon de Chelly.
- 13—Cattle raising.
- 14—Acoma Indians.
- 15—Highway 66.
- 16—Utah.
- 17—Corn.
- 18—Chemehuevis, whose tribal lands are now at the bottom of Lake Havasu.
- 19—Phoenix.
- 20—Death Valley.

Mines and Mining

Albuquerque, New Mexico . . .

Laguna Indians are reported to have found uranium ore on their reservation, halfway between Grants—site of the first atomic ore in New Mexico—and Albuquerque. The discovery has touched off speculation that the total uranium field may extend 100 to 120 miles in length and 80 miles in width. Members of the U. S. Atomic Energy Commission reportedly have inspected the area, but there has been no indication of their findings.—*Mining Record*.

Moab, Utah . . .

A topographical survey of the area west of Moab between the Colorado and Green rivers will be made by the United States Geological Survey at once. The survey is being undertaken on behalf of the Atomic Energy Commission to speed development of the recently discovered uranium deposits of the Grand county and adjacent districts.—*Moab Times-Independent*.

Albuquerque, New Mexico . . .

Santa Fe Railway has organized a new corporation, Haystack Mountain Development Company, to mine uranium ore recently discovered on company property near Grants, New Mexico. Haystack currently is negotiating with Anaconda Copper Company for the sale and delivery of its ore. Rock bearing uranium ore was discovered on Santa Fe land early in 1951 by a 59-year-old shepherd, Paddy Martinez. Result of exploration proved the deposit to be of sufficient quality and quantity to justify mining.—*Humboldt Star*.

Yerington, Nevada . . .

Announcement from the Defense Minerals Procurement Agency revealed an agreement with Anaconda Copper company for a five-year tax amortization of 75 percent of a huge copper development at Yerington, Nevada. It is estimated the development will cost a maximum of approximately \$40,000,000. Anaconda will invest about \$32,750,000 in developing the property, which has an estimated life span of 10½ years. Actual production of copper is expected to get under way early in 1953, and the company believes a minimum of 192,000 tons can be produced by 1959. When developed, the Yerington mine, one of the biggest in recent Nevada history, will be second in size only to the huge Kennecott workings in White Pine county.—*Humboldt Star*.

Randsburg, California . . .

Scores of small mines and prospects are under development on the scheelite-bearing belt extending approximately 100 miles from Atolia to Bishop, Inyo county, and more prospectors are searching for new deposits. Surcease Mining Company, said to be the nation's fourth largest tungsten producer, is operating its properties and concentration plant at top capacity at Red Mountain in the Atolia area. Many small operators report production is materially retarded by lack of a government purchasing depot and the restricted sales outlet.—*Mining Record*.

Tombstone, Arizona . . .

Renewal of old-time mining activity in Tombstone seems to be indicated by the recent purchase from the Tombstone Development Company of 96 connecting claims which cover all the Tombstone area. New owners, who locate in Chicago, plan to begin development operations this year. Higher market for local mineral products, particularly lead, prompted the purchase. Water from the inundated ore fields, flooded in the 1880's will be piped to Tucson, it is believed.—*Tombstone Epitaph*.

Lovelock, Nevada . . .

A recent 40-ton carload shipment of gold ore from the Buffalo Valley mine to a Utah smelter yielded \$6,400, according to a report issued by Bob Ostrander, part owner of the mine. Income from the shipment, which was taken from surface workings, is sufficient to justify mining and work is continuing.—*Mining Record*.

Pioche, Nevada . . .

Provisions of great importance to the metal mining industry, lending encouragement in the search for and development of new mining resources, are incorporated in the 1951 tax-increase legislation. One section provides that expenditures incurred in developing a mine, after existence of a commercial ore body has been disclosed, are deductible in the current year from otherwise taxable income, unless the mine owner prefers to defer them and charge off ratably as the ore developed is mined. This recognition of development expenditures as an operating expense, independent of percentage of depletion, has been urged by the industry for nearly ten years.—*Pioche Record*.

Austin, Nevada . . .

A new mineral previously unknown to science has been discovered in Pershing County, Nevada, according to information released by the Bureau of Mines. The mineral was found by Edgar H. Bailey of the Geological Survey in 1943, during an investigation of quick silver deposits at the Red Bird Mine in Pershing County. Although originally suspected to be zinkenite or jamesonite, it could not be identified immediately. After preliminary tests failed to place the mineral, X-ray pictures revealed the sample contained the typical pattern of boulangerite and lead-antimony sulfide, which had been produced synthetically. The new mineral was named "robinsonite" after the Queen's University professor whose investigations provided the key to identification.—*Reese River Reveille*.

Battle Mountain, Nevada . . .

A large deposit of barite, situated approximately 45 miles south of Battle Mountain and across the Mill Creek summit, has been leased by the Westvaco Company of California. Extensive drilling operations now are under way to determine the extent and grade of the ore. Early samples showed assays of high grade barite.—*Battle Mountain Scout*.

Vernal, Utah . . .

It is now commercially feasible to extract oil from shale, according to Secretary of the Interior Oscar L. Chapman. The Bureau of Mines believes its shale oil process developed at Rifle, Colorado, is now ready for large-scale commercial development, said Chapman. Proven by Pilot-plant operation, the method would add billions of barrels of potential reserves to the nation's proven reserves.—*Vernal Express*.

Cedar City, Utah . . .

Sodium nitrate, valuable in the production of munitions, has come principally from Chile and South Africa. No deposits have been known in the United States but a "hush-hush" discovery in southern Utah indicates that this important mineral has been uncovered about 40 miles west of Cedar City in Iron county. A check with the land office in Salt Lake City has revealed that two applications have been made to the Federal government for sodium prospecting permits, and the filings have been made on 5000 acres of land in Iron county. It has been learned by the Record that imports from Chile of sodium nitrate have been drastically cut during recent years due to the production of synthetic substitutes in this country.—*Iron County News*.

Here and There—on the Desert

ARIZONA

Hopis Protest Modern Life . . .

PHOENIX—"They are mere boys with new ideas, the white man's ideas," said Hopi elders to Governor Howard Pyle in a conference protesting the newly-formed Arizona inter-tribal Indian council, an organization of younger tribal leaders. Governor Pyle had suggested formation of the council.

The traditional leaders told the governor that only they can speak for the true Hopi way of life and that the young people of the tribe disregard the traditional leaders so have no standing.

"There are those among your people who are determined not to remain in poverty and want," Gov. Pyle reminded the elders. "I don't know that they want to forget they are Hopi or that they want to abandon Hopi religion. But they do want the white man's education and hospitals, and to become independent and able to support themselves without complete dependence on the federal government.

"There is no desire to impose the white man's way upon the old leaders. I recognize your traditions and deep tribal feelings, but you must realize the younger people are insisting something be done about the lot of the young.

"Because of this insistence, I and others who sincerely want to help solve some of the problems that face them are trying to lay out a plan for their future."—*Tucson Daily Citizen*.

Discuss Organ Pipe Park . . .

NEW YORK—Promotion of Organ Pipe Cactus national monument to the status of a national park is an aim of the national parks system, according to Secretary of the Interior Oscar Chapman. The change is proposed for "the more secure protection afforded" by park status.—*Tucson Daily Citizen*.

Honey Production Up . . .

HOLBROOK—Arizona's 1951 honey crop tentatively is estimated at 5,621,000 pounds by the bureau of agricultural economics. This is six percent more than the 5,304,000 pounds produced in 1950.—*Holbrook Tribune-News*.

Fewer Lions, Wolves Now . . .

GRAHAM COUNTY—Forty-three mountain lions and two wolves were killed in Arizona in the period from July 1 to November 15. Bounties paid by the state livestock sanitary board

totalled \$3,075, at the rate of \$75 for each animal. Bounties were not paid on those taken by government agents.—*Graham County Guardian*.

Yuma Project Approved . . .

WASHINGTON—Secretary of Interior Oscar Chapman has approved terms of a contract under which the bureau of reclamation will supply water to irrigate 75,000 acres of farm land near Yuma. Under the agreement, the reclamation bureau will deliver water on both sides of the Gila River 20 miles east of Yuma and extending 50 miles along the river through to Dome, Wellton and Roll areas of Arizona. Colorado River water will be conveyed to the project area through the Gila gravity main canal. Water users eventually will repay the government \$42,000,000 for construction of the irrigation works and other expenditures. This is the largest amount ever required under a reclamation bureau repayment contract for irrigation.—*Tucson Daily Citizen*.

Arizona's Population Jumps . . .

WASHINGTON—Arizona's population increase of 250,326 in the 1940-1950 census was the largest numerical gain in the history of the state, according to the final report of the 1950 census. Arizona's rate of growth of 50.1 percent was second only to California's 53.3 percent. National rate of increase for the period was 14.5 percent.—*Holbrook Tribune-News*.

CASA GRANDE—With abolishment of the Indian Service superintendent's position at Sacaton, the Pima Indians gain additional responsibilities. Under the new setup, the tribe will operate most of the agricultural development of the reservation.—*Casa Grande Dispatch*.

CALIFORNIA

Last Hereditary Chief Dies . . .

PALM SPRINGS—Albert Santos Patencio, last of the hereditary chiefs of the Agua Caliente Indians, died in Palm Springs after a long period of poor health. His age is listed officially as 72, but according to local Indians he was nearer 100 years old. Patencio's life was closely allied with Palm Springs history. He was the first handy man at the Desert Inn in 1909 and used to drive the team to the Southern Pacific station to get provisions and guests.—*Desert Sun*.



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Seek Heat Resistant Cattle . . .

CALEXICO — Finding the best breed of beef cattle for year-round use in hot areas of California—or developing a new strain if necessary—is the final objective of tests in progress by the animal husbandry division of the University of California. Collecting data on established breeds is the initial phase of the project, which is being carried out at the Imperial Valley Field Station in El Centro. A small herd of Brown Swiss—a type known to stand heat reasonably well—is now under test for adaptability to the region. —*Calexico Chronicle*.

Sierra Club Scales Peaks . . .

BISHOP—Two peaks east of Panamint Valley were scaled recently by 58 Sierra Club hikers. Kenneth Rich of the Desert Peak chapter at China Lake captained the group in its climbs of Coso peak, elevation 8100 feet, and Maturango peak, elevation 8850 feet. It is believed that this was the largest single party ever to scale these peaks. —*Inyo Register*.

Cajon Pass Job Begun . . .

SAN BERNARDINO — Work has begun on the first section of a highway over Cajon Pass, from Devore to Victorville. The initial project calls for construction of a four-lane arterial from a point six-tenths of a mile north of Devore to a spot two-tenths of a mile south of the Gish underpass, a distance of 10 miles. Second phase of the overall project calls for extension of the thoroughfare to the Cajon summit. It is expected that the latter job will be let sometime next spring or early summer. —*Las Vegas Review-Journal*.

Davis Dam Nears Completion . . .

SAN FRANCISCO—Work has begun on the last major contract in the building of Davis Dam and power plant. The contract provides for completing the concrete basin structure, excavating a spillway outlet channel and improving the channel of the Colorado River. The stilling basin will control the force of waterflow at the spillway and thus insure safety to the dam and powerhouse as well as prevent downstream damage in the event of an unusually heavy flood. —*Reclamation Era*.

COACHELLA — Ward H. Grant, veteran Coachella Valley newspaperman, is new owner and publisher of the *Desert Barnacle*. Retiring publishers are Mr. and Mrs. William T. Noble, who purchased the paper three years ago. Noble's ill health prompted the sale. —*Desert Barnacle*.

Indian Lands Up For Sale . . .

BANNING—Nine tracts of Indian land in Riverside county have been put up for sale by the Bureau of Indian Affairs. Included are two and a half acres on Highway 99 frontage in Banning and a 20-acre tract adjacent to the Palm Springs residential section. The nine tracts, appraised at \$92,831, consist of public domain Indian allotments, purchased lands held in trust by the Indian Bureau and reservation allotments. Money gained from the sales, part of a program designed to free California Indians from reservations, will go to the Indians. Description of the land and information regarding methods of bidding can be obtained from the Sacramento Area office of the Bureau of Indian Affairs, P.O. Box 749.—*Banning Record*.

Blythe May Have State Fair . . .

BLYTHER—Blythe may become the home of the third Riverside County annual state-financed fair. Negotiations are underway between Palo Verde delegates and the California State Committee on Fairs and Exhibitions. The Palo Verde Rodeo Association has proposed to deed to the State its 28-acre rodeo park within the Blythe city limits. Members of the association would stand to receive \$500 to \$700 each if the park were sold; but they have decided to give it to the state if it will establish a district agricultural association fair.—*Indio News*.

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Indians Oppose Freedom Bill . . .

BANNING — Sixteen reservations were represented at the inter-tribal meeting of Southern California Indians called to discuss a proposed bill to terminate federal supervision over Indian affairs in California. The Indians are afraid of the bill, which would release them from their present state of wardship. They feel it is being unsympathetically railroaded through Congress. Delegates at the meeting voted to ask a Congressional investigation to learn the facts about the Indians and the land before legislation is passed. — *Banning Record*.

NEVADA

Publication Suspended . . .

GOLDFIELD — Unable to cope with increasingly more difficult economic conditions, the *Goldfield News and Beatty Bulletin* has suspended publication. The *Goldfield News* was established in 1905 and has served the Esmeralda gold camp area since that time. The paper's plant recently was moved to Boulder City, where Bob Crandall, editor and publisher, plans

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to publish a new Boulder City paper. He had hoped to continue the *Goldfield News* there as well, but various problems make this unfeasible.—*Tonopah Times-Bonanza*.

Society Given V.&T. Records . . .

TONOPAH—Authors Lucius Beebe and Charles Clegg have presented to the Nevada State Historical Society a collection of photographs and papers

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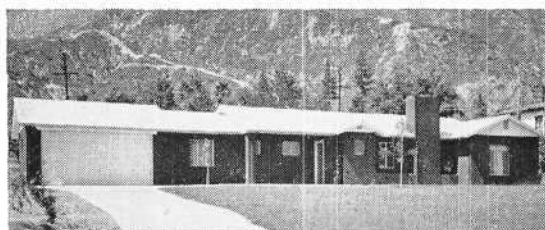
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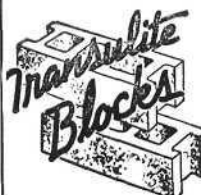
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which record the history and operation of the Virginia and Truckee Railroad, most celebrated of the bonanza short lines of the Old West. The acquisitions include large photomural reproductions of photographs of the V. & T. trains and locomotives, old passenger tickets, waybills and posters collected by Beebe and Clegg during the years of their intensive research into the history of the line. Officials of the historical society hope that eventually enough V. & T. material may be collected to fill a complete alcove in the museum.—*Tonopah Times-Bonanza*.

Wider Road to Atom Tests . . .

LAS VEGAS — Because of heavy increase in traffic, the road from Las Vegas to Camp Desert Rock will be widened, according to Huston Mills, state highway engineer. The highway department has urgently requested that the bureau and the war department give immediate approval of the project so that work can be started before another test involving troops is conducted at the army atomic maneuvers camp.—*Las Vegas Review-Journal*.

Water Supply Assured . . .

FALLON — A moderate storm in the Lake Tahoe area late in November practically assured the 1952 irrigation

supply for the Newlands project, according to watermaster Harry Richards. After the precipitation, Lahontan Dam stood at 117,672 acre feet. Flood danger was estimated at a minimum, water sheds being in good condition to handle excessive water.—*Fallon Standard*.

Atom Test Camp to Stay . . .

LAS VEGAS—Camp Desert Rock has been officially designated by the Army as history's first permanent atomic maneuvers camp. Brig. Gen. Burdette W. Fitch, former acting deputy commanding officer of the Sixth Army, will be in command of the camp, which lies 65 miles from Las Vegas. Desert Rock was the headquarters for more than 5000 G.I.s who participated in the series of atomic tests at Yucca Flat. Unofficial estimates placed the number of troops to be stationed there at 1000 to 1500.—*Salt Lake Tribune*.

Elko, Nevada . . .

A Goshute Indian squaw guided prospectors to the only commercial source of quartz crystals ever discovered in the United States, reported Ralph J. Albaugh, secretary of the Barite Corporation. Albaugh and several companions met the woman in Elko, near where she said she had

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found the glasslike stone she showed them. Analysis proved it to be a quartz crystal. The men learned that the material lay on top of the ground south of Ibapah, Millard County, in Juab County on the Goshute Indian reservation. The Barite Corporation has signed a lease with the government for sale of the critical mineral, needed in secret electronic devices.—*Salt Lake Tribune*.

University Gets Fossils . . .

WINNEMUCCA—Percy Train was a mining engineer and assayer who became interested in collecting fossils. With increasing recognition of his ability and diligence as a collector, he gradually devoted more time to fossil collecting. As a result of the recent gift of Mrs. Agnes Train Janssen of Laytonville, California, the Percy Train collection now is owned by the University of Nevada. An outstanding feature of the collection, according to President Malcolm A. Love of the University, is a fine suite of Triassic (175,000,000 years old) ammonite shells from Nevada and California, many of them exceedingly rare. The ammonite is an ancestor of the octopus and squid which had an outside coiled shell. Many of the Train specimens were collected at sites now covered by water behind Shasta Dam and are therefore irreplaceable. — *Humboldt Star*.

NEW MEXICO

Fireballs Over New Mexico . . .

ALBUQUERQUE—Dr. Lincoln La Paz, meteorite authority of the University of New Mexico, has advanced an explanation of the fireballs seen during November in the sky above Arizona and New Mexico. According to Dr. La Paz, we are passing through the Bielid asteroids, which was last seen in 1912. At various intervals in its orbit around the sun, the earth collides with the fragments left from exploded planets; these are called meteorites. But because these fragments move in a different orbit from that of the earth, there may be a long period of time before the two cross each other's paths. If Dr. La Paz's theory is correct, the two orbits, ours and that of the Bielid meteors, have coincided after an interval of 39 years.—*El Crepusculo*.

Apaches Bank Own Funds . . .

ALBUQUERQUE — Mescalero Apaches are breaking away from government apron strings in their banking. In the past, the Indian bureau has acted as banking agent for Indians, depositing money for them. Now the Mescaleros are transferring their tribal funds and individual accounts to private banks where the money will be

under their own supervision. Area Indian Director Eric Hagberg said the move is another to prepare Indians "to merge into prevailing social and economic life of the nation." — *Gallup Independent*.

Oil and Gas Land Boom . . .

SANTA FE — When 81 tracts of potential oil and gas land in southeastern New Mexico were opened to exploration, thousands of applications flooded the U. S. bureau of land management office. Climax of the modern-day land rush came with a legal lottery to determine who of the estimated 20,000 applicants would gain exploration rights to the land, which lies close to known production. The area has been closed since 1939 because of its potential potash production. Only a \$10 filing fee and a first year's rental of 50 cents an acre were required of applicants.—*Gallup Independent*.

Off-Reservation Jobs . . .

WASHINGTON—The government hopes to find 3000 permanent off-the-reservation jobs for Indians by next summer. "There just aren't enough jobs, agricultural or commercial, on the reservation to support the thousands of Indians," said Miss Selene Gifford of Rochester, Massachusetts, director of the bureau of Indian affairs placement service. She estimates that 40 percent—or approximately 171,000 persons—should move to permanent outside jobs. It is hoped this goal will be reached in another 10 years.—*Gallup Independent*.

Signboard Rules Face Test . . .

SANTA FE—Welcoming a chance for a court decision which would reveal just how far they could go, members of the New Mexico state highway commission turned down an offer to settle out of court a suit challenging the commission's authority to regulate signboards. "We'll let the court decide, and then it is up to the legislature if it wants a stronger law," said Chairman Ralph Jones. Opinion from the attorney general's office noted that the regulations were basically sound, but that there may be some question as to whether the commission can regulate signboards for esthetic purposes. Regulations governing spacing between signs might be challenged as being directed purely at preserving the view rather than at preserving safety. — *Gallup Independent*.

Chee Case Investigated . . .

GALLUP—Late in November, Indian service officials were called in to investigate the case of Kee and Mary Chee, Navajo parents who allegedly were forced to carry the body of their dead 7-month-old daughter on a long

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bus trip from Salt Lake City to Gallup. The death was discovered when the parents arrived by bus in Salt Lake City from Idaho, where they had worked in the beet fields. Chee said that officials in the Utah capital told him that he could take the body to Gallup with him, although no certificate was issued for its transport. Later the Chees issued a complaint saying they were forced to carry the body on the bus. The Navajo have a strong aversion to being in the presence of death, and the matter came to light when other bus passengers objected to the body remaining in their midst.—*Gallup Independent*.

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UTAH

Suggest Reservation Road . . .

BLUFF—Secretary of Interior Oscar L. Chapman and other officials from Washington during a recent visit here were impressed with arguments favoring a north-south improved highway across the Navajo Indian reservation, connecting Holbrook, Arizona, with Bluff, Utah. The reservations need a north-south highway and outlet somewhere between the Gallup-Shiprock, New Mexico, paved road and the contemplated arterial from Flagstaff to Tuba City, Arizona. It was pointed out by the Holbrook Chamber of Commerce that Holbrook is the half-way point between these two routes. Chamber members also suggested that the road might open up quick access to many mineral, oil and strategic materials deposits known to exist in the reservation, and that it would give shortest access from northern and central Arizona to Salt Lake City and Denver, Colorado.

Governor Urges Dam Support . . .

SALT LAKE CITY—Governor J. Bracken Lee of Utah has urged Utah water development officials to elect one man who will fight in an official state capacity for "Utah's share of the Colorado River." At the same time, he asked Secretary of the Interior Oscar L. Chapman to explain apparent top-level wavering over an earlier decision approving construction of Echo Park and Split Mountain Dams in Dinosaur National Monument.—*Salt Lake Tribune*.

Reruns Fatal River Course . . .

SALT LAKE — Twenty-eight months had slipped by since Bert Loper, Utah's legendary boatman, rode to his death in the swirling white waters of the Colorado River. Loper's widow, Mrs. Rachel Loper, had never been satisfied with the sketchy reports of the tragedy. So this November she, her nephew, Tom Busenbark, her grand nephew, Blaine Busenbark, and Ralph A. Badger, who was a member of the 1949 expedition, reran the course.

Their guide was Bert Lucas, Bureau of Reclamation engineer. The party entered the river near Cedar Ridge Lodge and travelled two miles downstream, passing by the wrecked boat of the famous riverman, who had shot Western river rapids for a half a century. The boat is pile up on a narrow beach as a memorial. It was Mrs. Loper's first trip, but she plans another when the weather is better next spring. — *Salt Lake Tribune*.

Motion Picture Rights Sold . . .

CEDAR CITY — Motion picture rights to *The Mountain Meadow Massacre* have been sold to Warner Brothers Motion Picture Studios, according to an announcement coming from the author, Mrs. Juanita Brooks, southern Utah historian, research expert and instructor of English at Dixie College. Filming is scheduled to begin soon. The book is a documented study of early southern Utah history, and it presents an entirely new psychological analysis of the reasons behind the pioneer tragedy.—*Iron County Record*.

Deer Hunt Successful . . .

CEDAR CITY—Success of Utah's first deer hunt under an either-sex law seems assured, according to all data and reports in the Fish and Game department. Less dead deer were left on the ranges this year than for many years; it is believed that this is a direct result of the new law, which is proving to be a move in the direction of better management of the state's deer herds.—*Iron County Record*.

Sign Program Begun . . .

KANAB—Early this year the Utah State Road Commission embarked on a state-wide program for the erection of "Entering City" signs. The signs are now being made, and incorporated areas of Utah soon will have posted at the entrance to each city the name of the city, with figures on population and elevation. — *Kane County Standard*.

Hear Oil Land Arguments . . .

SALT LAKE—Arguments on who owns half of the oil on most of Ashley Valley field, south of Vernal, are being heard by the Utah Supreme court. At stake are millions of dollars worth of production from the field which marked first commercial discovery of petroleum in Utah. N. J. Meagher, Vernal banker, alleges that a release given him in 1944 by a subsidiary of Equity Oil Company, which found the field, is actually a conveyance to one-half the oil. Meagher lost an earlier appeal for all of the oil from the 440 acres.—*Salt Lake Tribune*.

Gems and Minerals

AMATEUR ARCHEOLOGIST MAKES FIND NEAR CHICAGO

Hundreds of fishers, campers and hikers had stumbled over a rock at Pistakee Lake, but it remained for Adrian Puls to recognize it as an archeological discovery. Puls, reports the *Pseudomorph* of Kern County Mineral society, visited the resort area near Chicago, came upon the 300-pound rock and identified it as a large formation of copper brought down from the copper fields of the north by the last large glacier. An amateur archeologist for 25 years, Puls said it was from such copper that the Indians who once inhabited the Chicago area fashioned their arrowheads and tools.

GLENDALE SOCIETY SETS MAY SHOW DATE

Glendale Lapidary and Gem society already has set the dates—May 17 and 18—for its fifth annual show. Displays will be arranged in Glendale Civic Auditorium, which will provide enough space for the large number of exhibits and the many visitors expected. Last year approximately 10,000 persons viewed the show. Mrs. Orma Foote, president is in charge of show arrangements and invites exhibitors to send applications to the Glendale Lapidary society, P. O. Box 866, Glendale, California. Driftwood and desert flower displays will be included.

With the November issue, *Delvings* began its third year as the monthly publication of Delvers Gem and Mineral society, Downey, California. Ed Flutot, editor, now prints the bulletin on a small offset press which reproduces photographs as well as clear, readable type.

Scheduled speaker at the December meeting of the San Diego Lapidary society was James Moore, who was a member of the Rockefeller Expedition into the Upper Amazon. Moore is the discoverer of the ancient Indian civilization at Tepecula, and he spoke to the group of the Indian life which flourished there centuries ago.

PALO ALTO SOCIETY BEGINS SECOND YEAR

Palo Alto Geology society celebrated the beginning of its second year with a study of the geology of the Diablo range in San Benito County, California. Leaders were Dr. Gordon B. Oakeshott of the California Division of Mines and Lawrence J. Fuller of Palo Alto. Specimens of cinnabar ore were obtained at the New Idria mercury processing mill, and natrolite, benitoite, joaquinite and perovskite were found in the higher mountains. Clear Creek yielded chromite with uvarovite and jadeite.

William C. Holding is president of the Palo Alto society this year. Other officers are Miss Charlotte Matthews, vice-president; Mrs. Perry Theobald, secretary-treasurer; Mrs. David Hendrickson, historian; Robert Coffey, program director; Byrrel Condon, field trip director, and Lawrence J. Fuller, adviser.

CLUB MEMBER FINDS PINE FOREST IN AGATE

"Find of a lifetime" — that is W. A. Bakey's description of a moss agate he discovered last June on a rock-hunting trip to Montana. The agate is described in the *Rock Rustler's News*, publication of the Minnesota Mineral Club, of which Bakey is a member. The moss agate looked like any other until Bakey started cutting sections from it. He discovered that the stone contained more than 60 perfect pine tree scenes on 17 different slabs. These landscape scenes are formed by seepage of the "moss" into clear agate.

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Excavating in the Lompoc Valley area of California, a crew from the Santa Barbara Museum of Natural History discovered fossil remnants of a tooth whale who lived approximately 7,000,000 years ago. The skull and jaws of the animal have been dug out. The lower jaws alone weigh 600 pounds and measure six feet long.



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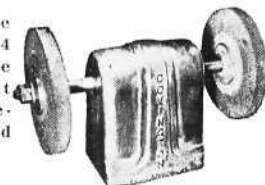
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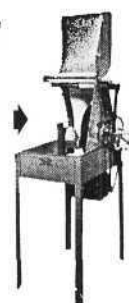
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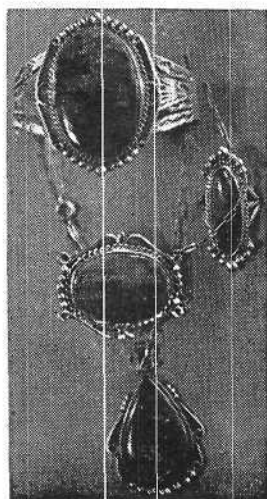
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AMONG THE ROCK HUNTERS

Dona Ana County Rockhound club has a library committee that supervises a book shelf in the Branigan Memorial Library in Las Cruces, New Mexico, reports a bulletin of the Rocky Mountain Federation of Mineral Societies. Each month funds are appropriated by the club for the purchase of books for the shelf. These books are checked out by the regular librarian only to members of the club who have paid their dues. A specimen case also is maintained in the library, and mineral exhibits are regularly changed. It is reported that visitors to the library carefully study each display.

"Gem Stones and How to Buy Them" was the subject of James Old, graduate of the Gemological Institute of America, when he spoke to members of the Northern California Mineral Society, San Francisco. Old formerly was a diamond dealer in New York.

Fresno Gem and Mineral society joined Sequoia Mineral society to present a show at the Fresno County Fair Grounds. Notable among the exhibits were the quartz display of Dave and Gladness Orr; the plume, mountain agate and opal collection of A. P. Gibson and the micro-mounts of Mr. and Mrs. Tom Goff. The Fresno Public Library presented a collection of books pertinent to geology and mineralogy.

Walter S. Chamberlin of Pasadena, leader of Southern California Grotto of the National Speleological society, spoke at a meeting of the Santa Monica Gemological society. "The development of mineral deposits in caves," Chamberlin explained, "begin with carbonic acid from decomposed vegetable matter on the surface seeping through fissures in the rock and dissolving the calcium carbonate in the rock, forming cave-like hollows. Mineral-laden waters dripping from ceilings and walls of the caverns build up and down the deposits known as stalagmites and stalactites, sometimes forming solid pillars." The speaker also listed equipment used by "spelunkers" in their cave exploration.

As part of its activities directed toward the stimulation of interest in the earth sciences, the Earth Science Club of Northern Illinois sponsors and furnishes instructors for classes in geology and silversmith arts. Part of the regular night school curriculum, classes meet in the Downers Grove Community High School. W. W. Briggs, club member from La Grange, Illinois, teaches silversmith arts and Dr. Frank Fleener conducts the course in geology. A class in archeology now is being organized.

Compton Gem and Mineral Club members relived rock-hunting experiences as they viewed movies taken on some of their field trips. Harry Chaffee showed color film of Death Valley, Horse Canyon, Tick Canyon, Corona del Mar and the Chuckawallas. Dick Giles projected color slides taken at the recent Compton Rockhound Fair.

Drawing from experiences of his seven mineral-collecting and pleasure trips to Mexico, Louis Vance spoke to the Mineralogical society of Southern California at a meeting in Pasadena. Vance, who illustrated his talk with colored slides, told of experiences which are likely to confront the rock hunter collecting in Mexico.

Mineral filler is defined by the California Mineral Information Service as any substantially inert mineral materials used primarily to modify the properties or processing of manufactured products. Fillers are frequently employed to improve a specific property of the finished product, although sometimes their chief function is only as a diluent, modifying the cost of production.

First field trip of the season for the Mineralogical society of Arizona took members to Golfields, Arizona, where Tom Russell related for them the town's history. Scheelite ore currently is being treated in the Goldfields mill.

Rex Layton is newly-elected president of the Gila Valley Gem and Mineral society, Arizona. Other board members are Walt Erwin, vice-president; Mrs. Muriel Layton, secretary, and Fenton Taylor, librarian and publicity chairman.

George Burnham recently returned from a mineral collecting trip around the world. He described his travels to the San Diego Gem and Mineral society at a general meeting. Especially interesting were his remarks on Africa. Burnham later repeated his talk at a session of the San Gabriel Valley Lapidary society.

Now presiding at meetings of the Los Angeles Mineralogical society is Harry C. Hurlbut, newly-elected president. Other officers are George W. Mayle, first vice-president; Lillian Copeland, second vice-president; Margaret Hall, treasurer; Lucile S. Thomas, secretary; Robert and Alma Newell, business managers; Wade and Rilla Barker, editors; and Frank Larkin, federation representative.

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When the directors of Calaveras Gem and Mineral society met at Angels Museum, Angels Camp, California, they considered plans for the 1952 convention of the California Federation of Mineralogical societies. The Calaveras group will be host at the show, to be held June 20-22 at the fairgrounds near Angels Camp.

Brewster Baldwin spoke on "The Identification of Common Rocks" at a regular meeting of the Santa Fe Gem and Mineral Club. Baldwin is connected with the New Mexico Bureau of Mines and is presently engaged in mapping the geology of the Santa Fe Area.

His experiences in growing full-size crystals from seeds were told by V. J. King, Jr., at a meeting of the Wasatch Gem society. King showed some of the specimens he cultivated.

The head of Abraham Lincoln has been carved from a 1318-carat sapphire, one of the five largest sapphires known. The sculptured gem is valued at \$250,000. Owners, James and Harry Kazanjian of Los Angeles, plan to have similar heads carved from other sapphires to represent Andrew Jackson, George Washington and Henry Ford.

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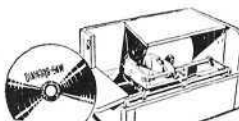
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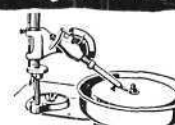
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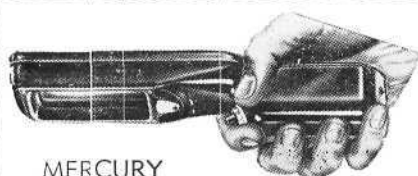
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Japan, India, the Philippines, Thailand, Rome, London, Paris and China were visited by members of the Gem Cutters Guild of Los Angeles on a travelogue trip conducted by W. E. Phillips. Speaker Phillips displayed some of his rarest gem pieces from these countries, including a clear citrine of 944 carats, an amethyst of 200 carats and a brown peridot weighing 1.58 carats. He also showed specimens of sapphire, zircon, tourmaline, topaz, kunzite and a green diamond.

Searles Lake Gem and Mineral society of Trona directed the gem and mineral exhibits at the third annual Death Valley Encampment December 1 and 2. All rockhounds, whether members of a club or not, were invited to display their collections.

Beach materials, moonstones and the like, were hunted by Sacramento Mineral society and its guest group, Feather River Mineral and Gem society, on a field trip to Pescadero Beach and Pigeon Point on the Northern California coast. Members followed the late afternoon tide out and searched for petrified whalebone.

Long Beach Mineral society traveled 150 miles to Kern Dry Lakes, California, for a field trip. By digging 12-18 inches in the soil, varieties of petrified wood were found.

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SPEAKER DISPLAYS ART OF SOUTHWEST INDIANS

Miss Ruth Simpson, curator of Southwest Museum, Los Angeles, spoke on 'Stones Used by the Indians for Ornamental Purposes' at a meeting of the Los Angeles Lapidary society. Miss Simpson has made the study of Indian jewelry her hobby. She illustrated her remarks with a display of arrowheads, turquoise jewelry, figurines, fetishes, pipes, charm stones and beads. Many of these artifacts were excavated at a Mojave Desert site estimated to be 10,000 years old.

Mineral Minutes, publication of the Colorado Mineral Society, has announced the date for a joint convention of the American Federation of Mineral societies and the Rocky Mountain Federation. The convention will be held in June at Canon City, Colorado.

Two speakers shared the podium at a meeting of the Northern California Mineral society, San Francisco. Robert White told "How to Find Mineral Locations" and Don Grenfell related his trip to the Friday agate beds in Oregon. Jewelry and cabochons were displayed by Alden Clark.

"Travels in Wonderland," 100 photomicrographs of rare scenes, formations and inclusions in agate, provided the program at a recent meeting of the Coachella Valley Mineral society. Winners of the society's song contest were announced: George Alton won first prize, Martha Danner claimed second-place honors.

It was the second annual show for the Whittier Gem and Mineral society this fall. Exhibits, with Kenneth Tharp as display chairman, were arranged in the Whittier Riding clubhouse. An estimated 1200 persons attended.

Illustrating her talk with colored slides, Mrs. Mary Brentlinger spoke on "Shells, Stones and Silver" at a meeting of the Chicago Rocks and Minerals society. An auction completed the evening program.

Old copper, gold and onyx mines at Bent, New Mexico, were visited by members of the El Paso Gem and Mineral society. Numerous outcroppings of onyx, some streaked, some mottled, are found in the area.

Since half of its members reside outside of San Mateo County, California, the Gem and Mineral society of San Mateo County is considering changing its name to Peninsula Gem and Mineral society.

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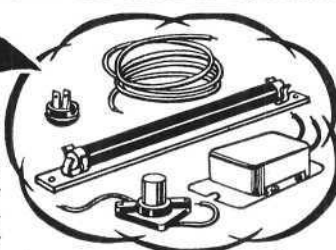
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Amateur Gem Cutter

By LELANDE QUICK, Editor of The Lapidary Journal

Mrs. Frances E. Creson of La Mesa, California, writes that she now has cutting equipment but she would like to know how to clean the rocks she is gathering. The cleaning of ordinary rocks presents no problem beyond having a bucket of water and some soap, a brush and plenty of energy. Most of the rocks gathered by the rockhound are in the quartz family and soap and water will do them no harm.

When a geode is opened and it is desired to clean it out a very good method is to direct a strong stream of water upon it. The ordinary hose or faucet pressure usually is not sufficient to accomplish a thorough job, however, and the following method is suggested. Solder a piece of copper over the end of an old hose nozzle, after placing a pin hole in the center of it. When the nozzle is attached to the hose the resulting pin point stream will be so strong that it will feel like a needle entering the finger if the stream is directed on the hand. It is amazing what happens to a supposedly clean geode when this stream is directed into its crevices.

Except for removing grease, hot water will not necessarily work any better than cold water and it is downright dangerous to use hot water on specimens such as opal. The problem of grease is usually presented in finished specimens exposed to home cooking fumes and ordinary house dust. Finished gems and fine mineral specimens should always be protected by being kept in cabinets or glass covered boxes.

A popular method of storing cabochons is to use the Rker mount. This patented display box is manufactured for the express purpose of displaying zoological and botanical specimens. The cotton filler is therefore treated chemically with preservatives that make gems have an iridescent effect. The cotton should be removed and replaced with new cotton that is free of chemicals. Gems showing this oily film can be washed or cleaned with "sight savers," made by the Dow Corning Corporation. These are sold at most drug stores and are made for cleaning eye glasses. Try them on some soiled cabochons and see how they sparkle.

Outside of the loose dirt adhering to rocks the two most bothersome things to clean away are algae and rust, or the oxidation caused by iron. If ammonia is placed in a bucket of water and the rocks are allowed to soak in it a few hours algae or lichens are easily removed with a brush. The problem of removing rust is more complex and several methods are given by Pearl in "Mineral Collectors Handbook." Most of these methods are somewhat dangerous to use around the house.

Probably the least bothersome and safest method of removing rust from specimens is to soak them in concentrated hydrochloric acid for two weeks . . . one part of HCl to ten of water. Follow this soaking with two weeks in distilled water then a week in ammonium hydroxide and another four weeks in distilled water. Do not use this method for fine mineral specimens containing several crystalline forms for there is usually one that may be harmed in such a procedure.

Fine crystal specimens taken from the field should be given every chance of being cleaned by soap and water and later by brushing with an artist's camel hair brush

before undertaking the complex procedures mentioned in the books.

As slabs are taken from the cutting saw they can be cleaned of oil by dropping them in a pail of soapy water or merely into a box filled with sawdust. The sawdust deal is fine and less bothersome to the run-of-the-mill slabbing of the average rockhound. Oil should be instantly washed from materials like turquoise.

As gems are finished they should be cleansed of all wax residue from the dop stick. This simple matter often puzzles the amateur and we see many books and articles recommending the use of alcohol. A far better agent is acetone, procurable from any drug or paint store. This should be stored in a ground glass stoppered bottle to prevent evaporation—and do not smoke while you are using it. This is the chief ingredient of the nail polish removers used by the ladies. It sure makes that wax disappear.

It is smart to save all your old toothbrushes for they come in handy in cleaning rocks. Be sure the handle of any brush you use for acetone however is not made of plastic for acetone will dissolve it and make a messy stone.

* * *

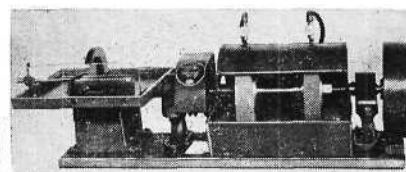
W. R. Bishop of Emlenton, Pennsylvania, writes that he has been having a great deal of difficulty polishing ricolite, vesuvianite and nephrite with levigated alumina on a felt wheel. "Should I be using something else?" he writes. Yes you should Mr. Bishop. I have never heard of any amateur lapidary using levigated alumina although I have read of it in books.

Most lapidaries today use either tin oxide or cerium oxide or both. As it is now illegal to sell tin oxide for polishing purposes it is becoming very scarce in dealers' stocks so that cerium oxide is used almost exclusively for most polishing.

Cerium oxide was first mentioned as a polishing agent in this column in July, 1945. At that time no dealer had it in stock. Immediately the demand became so great that almost all dealers stocked it and today it would be difficult indeed to find the dealer who does not have it. On the other hand it would be almost impossible to find a dealer with levigated alumina on his shelves.

The felt wheel is all right for ricolite and here is the best method of polishing it. Wet about an inch and a half on one side of the wheel with water glass solution and dust on 250 lapping grit. Do the same on the other side of the wheel and dust on 1200 grit. Occasionally wipe a smear of jeweler's rouge on the wheel and do not hold the work to the buff for ricolite "burns" easily.

Vesuvianite can be polished very well on the felt wheel with cerium oxide but switch to a leather buff for the nephrite. The best method of polishing jade is to use wet sanders followed by the use of Jade Luster Powder on a leather buff. If this is not procurable from your dealer then get chrome oxide. However wet sanding eliminates a lot of work on the polishing buff and regardless of the method used all polishing agents are disappointing unless a generous amount of patience is mixed with them. No one can polish jade like the Chinese but then no other race possesses their patience.



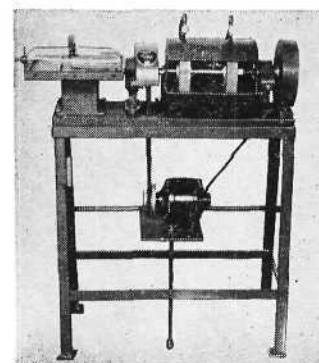
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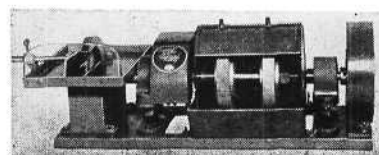
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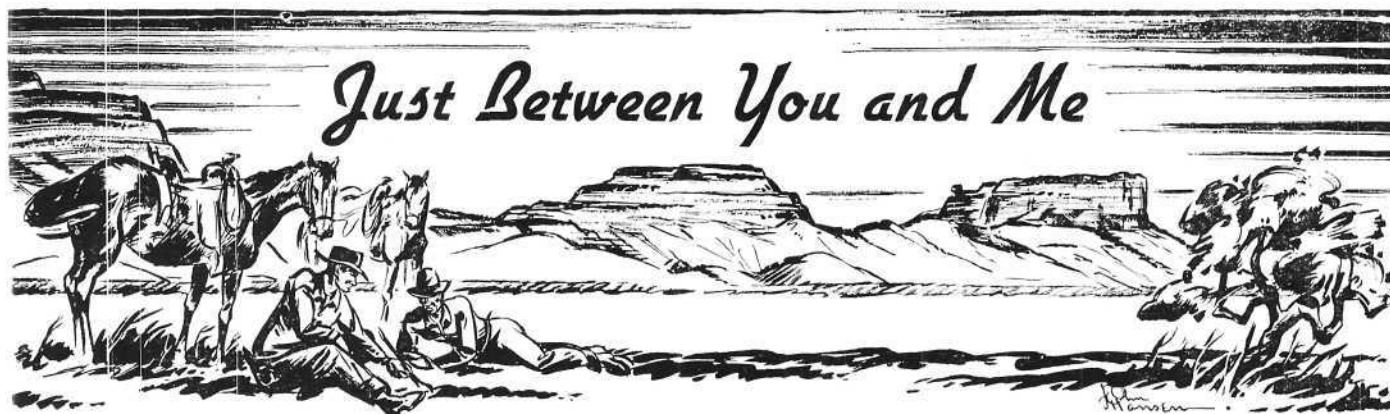
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By RANDALL HENDERSON

EARLY IN December Cyria and I were among the 2500 motorists who went to Death Valley to witness the Third Annual Encampment of the Death Valley 49ers.

We spent two glorious winter days in the sunshine of California's most colorful desert region—and one night in our sleeping bags among the sand dunes at the base of snow-crested Panamint range.

In contrast with the gorgeous pageant staged by the California Centennial Commission in Death Valley two years ago, the 1951 program was a very modest affair. But it was none the less enjoyable, and I believe John Anson Ford and his 49er organization have laid the groundwork for an annual desert event which will become increasingly important—and popular—as the years pass.

Those who went to the Death Valley pageant two years ago will recall the hours they spent in a bumper-to-bumper traffic jam. There was none of that this year. Death Valley is a spacious place, and the events and exhibits were so timed and arranged that no one had to stand in line for anything.

More than half of this year's Encampment visitors solved the housing problem by going to Death Valley in trailers. Over six hundred of them were counted in the camp grounds which the Park Service has provided in the Monument.

Under the rules of the National Park Service, no one is permitted to sell anything in a National Park or Monument without a concessioner's license from the federal government. This requirement kept the Monument free from the various kinds of hawkers who normally, at such a gathering, would be selling everything from hot dogs to beans in the bingo game. It was a refreshing experience to spend two days at an entertainment event where there were no admission tickets to buy and no high pressure salesmen around.

This year's Encampment was financed mainly by the sale of \$1.00 memberships in the Death Valley 49ers. There was a booth where the membership cards and windshield stickers were issued—but the purchase of them was voluntary.

The motif for this Annual Encampment in Death Valley is historical. This is California's way of paying tribute to the memory of those courageous Jayhawkers of 1849 who faced almost unbelievable hardship in their trek across this region to reach the California gold fields.

The men and women responsible for the Annual Encampment this year planned it as a cultural rather than a carnival program—and you and I are grateful to them for that.

It is impossible to mention all those who contributed to the success of this year's program, but much of the credit is due to Los Angeles County Supervisor John Anson Ford, Ardis M. Walker, T. R. Goodwin, Frank

Latta, Paul B. Hubbard, George Sturtevant, Arthur W. Walker and George Savage, and to the special chairmen of this year's events: John W. Hilton, who arranged the fine art exhibit at Furnace Creek Inn; Paul Gruendyke, in charge of the campfire program; William R. Harriman, who brought together an excellent mineral display; Floyd D. Evans, who arranged a photographic salon of desert pictures; Robert K. Ellithorpe, chairman in charge of a fire arms collection; John D. Henderson, chairman of the Authors' Breakfast at the Furnace Creek Golf course.

As Cyria and I were cooking our camp dinner out among the dunes, barefooted Jimmy and Beverly Shoshone came across from the Indian village to pay us a visit. These two youngsters, six and eight years old, are descendants of the Indians who saw the original 49ers trek across Death Valley 102 years ago. Their great uncle was Panamint George, picturesque character in Death Valley for many years, before his death.

The little tribe of about 25 Shoshone Indians in Death Valley, unlike most of the other Indians in United States, are not wards of Uncle Sam. They occupy 40 acres of land given them by the Park Service, and such aid as they receive comes from the State of California rather than from the federal government.

Jimmy and Beverly are bright youngsters and thanks to Helen Ogston, their teacher in the Death Valley school, they are learning to speak good English, and are acquiring the good manners which will pave the way for their adjustment to the white man's civilization.

Excepting those occasional days when heavy winds are blowing, Death Valley in winter is a delightful place to camp and explore. Excellent accommodations are provided at Stove Pipe Wells, and at the Furnace Creek Inn and Ranch, and there are good facilities for those who like to camp out, as many of us did during the Encampment this year.

I hope that in future years Death Valley 49ers will enlarge the campfire program which was arranged this year. The art and photographic exhibits, the mineral and museum displays are fine, and should be continued. But a mammoth campfire program, arranged in one of the many natural amphitheatres at little expense except for the firewood, should become the focal event for those who will make the annual trek to Death Valley.

If we would preserve the tradition of those hardy pioneers who trekked westward to California a century ago, a campfire offers the most realistic setting—and since the funds which will be available for the Death Valley Encampment are very limited—it also provides the most economical stage for a program which visitors will like for its informality.

Books of the Southwest

THE TRAGEDY OF AN EDUCATED INDIAN

Carlos Montezuma was an Apache born in 1865 when the Indians of the Southwest were still living the primitive life. Little Carlos—*Wassaja* was his Apache name—loved mescal cake, munched pinyon nuts, ate newborn baby mice and ran naked and free in the Apache camp in the Superstition Mountains of Arizona. His people warred on the nearby Pima, Maricopa and Papago tribes.

One night the Pimas struck and practically wiped out *Wassaja's* village, carrying away a few children to be used or sold as slaves. Six-year-old *Wassaja* was among them. A kindly white bachelor, Carlos Gentilé, attracted to the appealing little Apache, bought him from the Pimas. Gentilé made his living as an itinerant photographer and *Wassaja*, given the name of Carlos Montezuma, lived a fascinating, wandering life with his benefactor, learning white ways and traveling over the United States to the Atlantic seaboard.

Gentilé arranged that he should be educated and Carlos' native brilliance was trained as that of no other Indian of that period had ever been trained. He was graduated with honors from Illinois University and studied medicine at Northwestern University, becoming one of the nation's most famous doctors.

But Carlos Montezuma, as the years passed, became more and more conscious of the miseries and wrongs suffered by his Indian people and campaigned incessantly for their advancement. The tragedy of his life was that even his own Apache tribesmen had not yet reached the stage where they could appreciate his efforts. A hopeless tubercular, Carlos finally died a lonely, pitiful death in a bare Apache wickiup. Brilliant and successful by the highest white standards, yet when he knew that death was inevitable, he returned to the land of his fathers, his heart as well as his health broken by his fruitless efforts for his people.

The story of Carlos Montezuma is told in *Savage Son* by Oren Arnold. It is a sincerely sympathetic tale which will help readers to understand the problems of their Indian countrymen.

Published by the University of New Mexico Press, Albuquerque. 273 pp. \$4.50.

MONUMENTS ASSOCIATION PUBLISHES MISSION HISTORY

Tumacacori, the famous old Spanish mission in southern Arizona, now a national monument, is the subject of a colorful history told by Earl Jackson in *Tumacacori's Yesterdays*, newest booklet published by the Southwestern Monuments Association.

Jackson covers Pimeria Alta history in general, and Tumacacori history in particular. From the first visit by Father Kino in 1691, he takes the reader through the end of the Jesuit period in 1767, through the following Franciscan period (when Tumacacori gained importance as one of a chain of missions and during which the present church was built), into the second quarter of the 19th century and the end of mission activity.

Illustrations in the book gain much from research accomplished by the National Park Service during the 1930's, when exhibits were being prepared for the monument museum at Tumacacori. Included are many photographs of models and dioramas and drawings which give the reader graphic pictures of Spanish life in Arizona in Tumacacori's heyday about 1800 A.D. There are two maps, a ground plan, seven line drawings and 43 halftone plates.

Published by the Southwestern Monuments Association, the 96-page booklet may be obtained from the Superintendent, Tumacacori National Monument, Tumacacori, Arizona, or from the office of the Association, Box 1728, Santa Fe, New Mexico.

SOURCE BOOK A STUDY OF EARLIEST CALIFORNIANS

For the reader interested in understanding the culture of the state's first inhabitants, R. F. Heizer and M. A. Whipple have compiled and edited a collection of essays on the Indians of California.

The California Indians is the first book since Alfred L. Kroeber's highly technical and comprehensive *Handbook of the Indians of California*, a volume long out of print, which adequately delineates and interprets the aboriginal life in California. It is intended for a lay public and, being a survey rather than an encyclopedia for reference work, it is readable as well as informative.

Kroeber himself heads the list of outstanding anthropologists whose writ-

ings were selected by editors Heizer and Whipple. General surveys open the book and form a reading background. Other sections cover history and material and social cultures.

Several chapters are dictated by tribesmen, who elucidate social customs and religious beliefs in the stories they tell as well as in their manner of narrative. One of the concluding essays attempts to trace and analyze the conflicts which arose in 1848 with the coming of white civilization.

The study is limited strictly to the one state and few extra-California comparisons have been instituted. The purpose of the book, according to the editors, has not been so much to relate California as a unit to other American cultures as to outline the internal relations of the primitive civilization of the area.

Published by the University of California Press, 1951, 487 pp. Several maps, drawings and halftone illustrations, \$6.50.

STORY OF ADVENTURE FOR YOUTHFUL READERS

Jedediah Smith by Olive Burt is a book for young people telling the story of the adventurous, dramatic life of one of the famous Mountain Men who blazed the trails that led to the opening of the West. In 1822 a young man answered an ad to join a party of beaver trappers. General Ashley of the Rocky Mountain Fur company quickly realized that this youth had the qualities for leadership which were essential in this dangerous enterprise. Exploring untracked wilderness, braving attacks from hostile Indians, enduring the searing heat of limitless deserts, the bitter cold of Rocky Mountain winters demanded high courage, resourcefulness and determination.

After several years of hard, dangerous exploring and trapping, Diah had attained wealth. But he did not live to enjoy it and to write the book of information for which he had been keeping notes all through his journeys. To please two younger brothers, he outfitted an expedition for Santa Fe. But the old restless fever again possessed him and at the last moment he joined it. In the trackless burning desert, searching for water, a band of Comanches killed him.

Olive Burt has made one of our early historical figures live, for old as well as young. And in so doing she has added to our knowledge of the early days of our fabulous western lands.

Sketches by Robert Doremus. Published by Julian Messner, Inc. 8 West 40th St., New York. 180 pp. Bibliography and Index. \$2.75.

MEN AND EVENTS YOU SHOULD KNOW

The most fascinating chapter in American history is the story—the many stories—of the men who conquered the arid wilderness of the Southwest and prepared the way for the enjoyment which people find today in this colorful land of rugged mountains and fertile oases.

Here are books that should be in the library of every American—for in the lessons of the past are found many of the answers for the problems of today. Here are the stories of pioneers, scouts, Mountain men, missionaries, explorers and fighters—and their contribution to Southwestern history.

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